

SERVICE MANUAL

BA-5 CHASSIS

<u>MODEL NAME</u>	<u>REMOTE COMMANDER</u>	<u>DESTINATION</u>	<u>CHASSIS NO.</u>
KV-27FS12	RM-Y168	US	SCC-S40D-A
KV-27FS12	RM-Y168	CND	SCC-S41D-A
KV-27FS16	RM-Y169	US	SCC-S40E-A
KV-29FS12	RM-Y168	E	SCC-S38K-A
KV-29FS12C	RM-Y168	E	SCC-S38L-A



KV-27FS16



RM-Y168

TRINITRON® COLOR TELEVISION

SONY®

SPECIFICATIONS

	KV-27FS12	KV-27FS16	KV-29FS12	KV-29FS12C
Power requirements	120V, 60Hz	120V, 60Hz	120V/220V, 60Hz/50Hz	120V/220V, 60Hz/50Hz
Number of inputs/outputs				
Video ¹⁾	3	3	3	3
S Video ²⁾	1	1	1	1
Audio ³⁾	3	3	3	3
Audio Out ⁴⁾	1	1	1	1
Y, P _B , P _R ⁵⁾	1	1	1	1
Speaker output(W)	5Wx2	5Wx2	10Wx2	10Wx2
Power Consumption(W)				
In use(Max)	160W	170W	185W	185W
In standby	1W	1W	1W	1W
Dimensions(W/H/D)				
(mm)	700 x 632 x 512 mm.	700 x 632 x 512 mm.	700 x 632 x 512 mm.	700 x 632 x 512 mm.
(in)	27 ^{1/2} x 24 ^{7/8} x 20 ^{1/8} in.	27 ^{1/2} x 24 ^{7/8} x 20 ^{1/8} in.	27 ^{1/2} x 24 ^{7/8} x 20 ^{1/8} in.	27 ^{1/2} x 24 ^{7/8} x 20 ^{1/8} in.
Mass				
(kg)	47kg	47kg	47kg	47kg
(lbs)	103 lbs. 10 oz.	103 lbs. 10 oz.	103 lbs. 10 oz.	103 lbs. 10 oz.

- 1) 1 Vp-p 75 ohms unbalanced, sync negative
- 2) Y: 1 Vp-p 75 ohms unbalanced, sync negative
C: 0.286 Vp-p (Burst signal), 75 ohms
- 3) 500mVrms (100% modulation), impedance: 47kilohms
- 4) More than 408 mVrms at the maximum volume setting (variable)
More than 408 mVrms (fix)
- 5) Y: 1.0 Vp-p, 75 ohms, sync negative; P_B: 0.7 Vp-p, 75 ohms;
P_R: Vp-p, 75 ohms

Television system

American TV standard/NTSC

Channel coverage

VHF:2-13/UHF:14-69/CATV:1-125

Visible screen size

27" picture measured diagonally

Actual screen size

29" picture measured diagonally

Antenna

75 ohm external antenna terminal for VHF/UHF

Supplied accessories

Remote Commander RM-Y168 (ALL EXCEPT KV-27FS16)
Remote Commander RM-Y169 (KV-27FS16 ONLY)
Size AA (R6) batteries (2)

Optional accessories

Connecting cables: VMC-810S/820S, VMC-720M,
YC-15V/30V, RK74A
U/V mixer EAC-66
TV Stand: SU27FD3

Design and specifications are subject to change without notice.

TABLE OF CONTENTS

<i>Section</i>	<i>Title</i>	<i>Page</i>
	Warnings and Cautions	4
	Self-Diagnostic Function	4
	Safety Check-Out Instructions	7
1. GENERAL		8
2. DISASSEMBLY		
2-1.	Rear Cover Removal	14
2-2.	Chassis Assembly Removal	14
2-3.	Service Position	14
2-4.	Picture Tube Removal	15
3. SET-UP ADJUSTMENTS		
3-1.	Beam Landing	16
3-2.	Convergence	17
3-3.	Focus	18
3-4.	Screen (G2)	19
3-5.	Method of Setting the Service Adjustment Mode	19
3-6.	White Balance Adjustments	19
4. SAFETY RELATED ADJUSTMENTS		
4-1.	☒ R564 Confirmation Method (HV Hold-Down Confirmation and Readjustments)	20
4-2.	B+ Voltage Confirmation and Adjustment	20
5. CIRCUIT ADJUSTMENTS		
5-1.	Setting the Service Adjustment Mode	22
5-2.	Memory Write Confirmation Method	22
5-3.	Adjustment Buttons and Indicators	22
5-4.	MA Board Adjustments	25
6. DIAGRAMS		
6-1.	Block Diagram	31
6-2.	Circuit Board Location	35
6-3.	Printed Wiring Boards and Schematic Diagrams	35
	• A Board	36
	• MA Board	43
	• CA Board	49
	• HX Board	50
	• D Board	51
	• K Board	53
	• VA Board	54
	• P Board	55
6-4.	Semiconductors	57
7. EXPLODED VIEW		
7-1.	Chassis (KV-27FS16/27FS12 ONLY)	58
7-2.	Chassis (KV-29FS12/29FS12C ONLY)	59
8. ELECTRICAL PARTS LIST		60

WARNINGS AND CAUTIONS

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK \triangle ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS, AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RESQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE \triangle SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSEES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMERO DE PIECE EST INDIQUE DANS LE PRESENT MANUEL OU DANS DES SUPPLEMENTS PUBLIES PAR SONY. LES REGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRESENT MANUEL. SUIVRE CES PROCEDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT SUSPECTE.

SELF-DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER LED flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

Diagnostic Test Indicators

When an error occurs, the STANDBY/TIMER LED will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the LED will identify the first of the problem areas.

Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

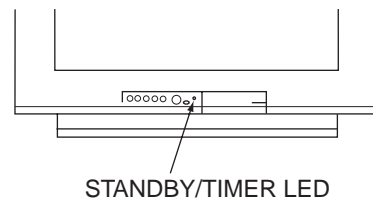
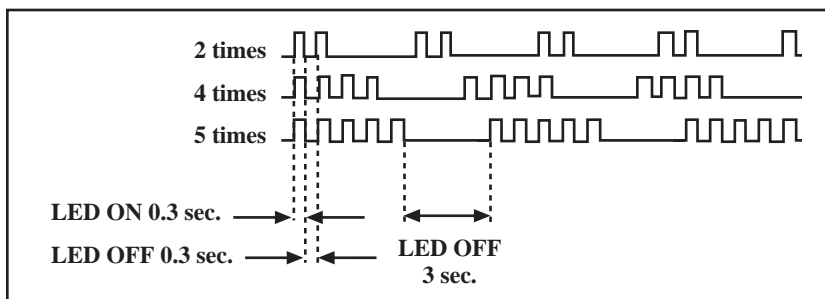
Diagnostic Item Description	No. of Times STANDBY/TIMER LED Flashes	Self-Diagnostic Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	_____	<ul style="list-style-type: none"> Power cord is not plugged in. Fuse is burned out. (F601) (A Board) 	<ul style="list-style-type: none"> Power does not come on. No power is supplied to the TV. AC power supply is faulty.
+B overcurrent (OCP)*	2 times	2:0 or 2:1	<ul style="list-style-type: none"> H.OUT (Q502) is shorted. (A Board) IC702 is shorted. (CA Board) 	<ul style="list-style-type: none"> Power does not come on. Load on power line is shorted.
I-Prot	4 times	4:0 or 4:1	<ul style="list-style-type: none"> +13V is not supplied. (A Board) IC502 is faulty. (A Board) 	<ul style="list-style-type: none"> Has entered standby state after horizontal raster. Vertical deflection pulse is stopped. Power line is shorted or power supply is stopped.
IK	5 times	5:0 or 5:1	<ul style="list-style-type: none"> Video OUT (IC502) is faulty. (A Board) IC301 is faulty. (MA Board) Screen (G2) is improperly adjusted.** 	<ul style="list-style-type: none"> No raster is generated. CRT cathode current detection reference pulse output is small.

* If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.

The symptom that is diagnosed first by the microcontroller is displayed on the screen.

** Refer to Screen (G2) Adjustments in Section 3-4 of this manual.

Display of Standby/Timer LED Flash Count



<u>Diagnostic Item</u>	<u>Flash Count*</u>
+B overcurrent	2 times
I-Prot	4 times
IK	5 times

*One flash count is not used for self-diagnostic.

Stopping the Standby/Timer LED Flash

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER LAMP from flashing.

Self-Diagnostic Screen Display

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

To Bring Up Screen Test

In standby mode, press buttons on the Remote Commander sequentially, in rapid succession, as shown below:

Display → Channel [5] → Sound volume [−] → Power ON



Note that this differs from entering the service mode (sound volume [+]).

Self-Diagnostic Screen Display

SELF DIAGNOSTIC			
2:		0	← Numeral “0” means that no fault was detected.
3:	N/A	0	
4:		0	
5:		1	← Numeral “1” means a fault was detected one time only.
101:	N/A	0	

Handling of Self-Diagnostic Screen Display

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

Clearing the Result Display

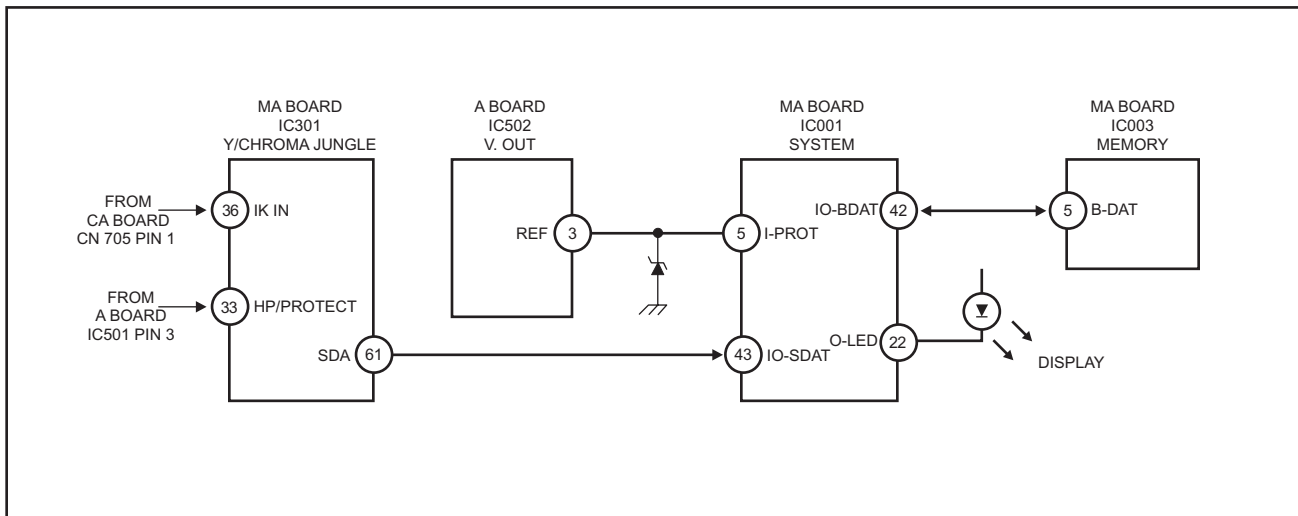
To clear the result display to “0”, press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel **8** → **ENTER**

Quitting the Self-Diagnostic Screen

To quit the entire self-diagnostic screen, turn off the power switch on the Remote Commander or the main unit.

Self-Diagnostic Circuit



+B overcurrent (OCP)

Occurs when an overcurrent on the +B (135V) line is detected by pin 33 of IC301 (MA Board). If the voltage of pin 33 of IC301 (MA Board) is less than 1V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

I-Prot

Occurs when an absence of the vertical deflection pulse is detected by pin 5 of IC001 (MA Board). Power supply will shut down when waveform interval exceeds 2 seconds.

IK

If the RGB levels* do not balance within 2 seconds after the power is turned on, this error will be detected by IC301 (MA Board). TV will stay on, but there will be no picture.

*(Refers to the RGB levels of the AKB detection Ref pulse that detects 1K).

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble- light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

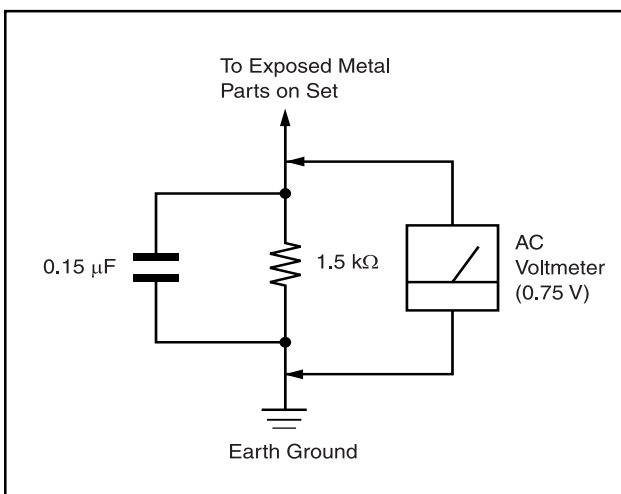


Figure A. Using an AC voltmeter to check AC leakage.

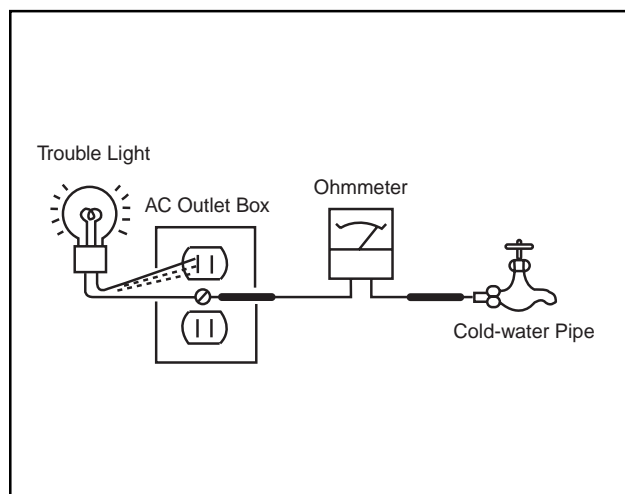


Figure B. Checking for earth ground.

SECTION 1 GENERAL

The instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers shown reflect those of the Operating Instruction Manual.

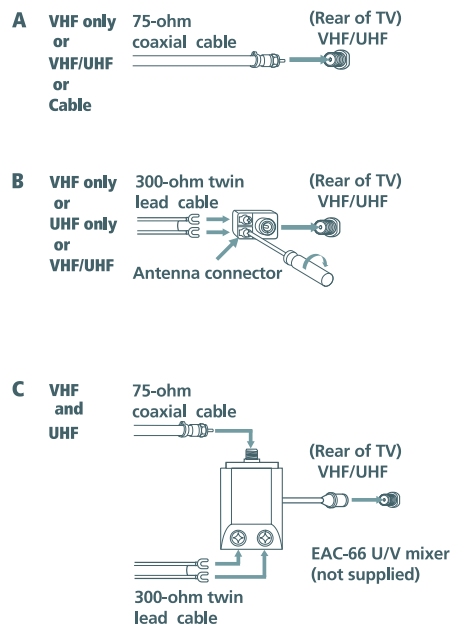
Connecting Your TV

Read this chapter before setting up your TV for the first time. This section covers basic connections in addition to any optional equipment you may be connecting.

Basic Connections

TV with indoor or outdoor antenna, or CATV cable

Depending on the cable available in your home, choose one of the connections below:



If you are connecting to an indoor or outdoor antenna, you may need to adjust the orientation of the antenna for best reception.

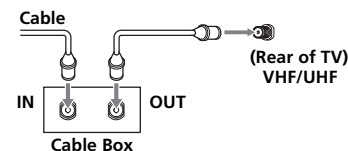
3

Operating Instructions

Cable Box Connections

Some pay cable TV systems to use scrambled or encoded signals that require a cable box to view all channels.

Cable Box

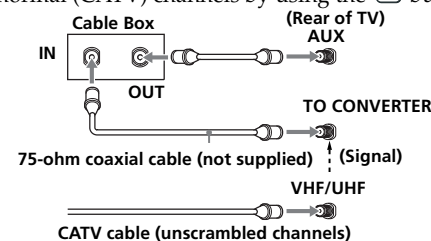


- 1 Connect the coaxial cable from your cable service to the IN jack on your cable box.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the VHF/UHF jack on your TV.

If you will be controlling all channel selection through your cable box, you should consider using the Channel Fix feature, (see page 26).

Cable Box and Cable

For this set up, you can switch between scramble channels (through your cable box), and normal (CATV) channels by using the **ANT** button.



If you are connecting a cable box through the AUX input and would like to switch between the AUX and normal (CATV) input, you should consider using the Channel Fix feature, (see page 26).

Your Sony remote control can be programmed to operate your cable box, (see page 36).

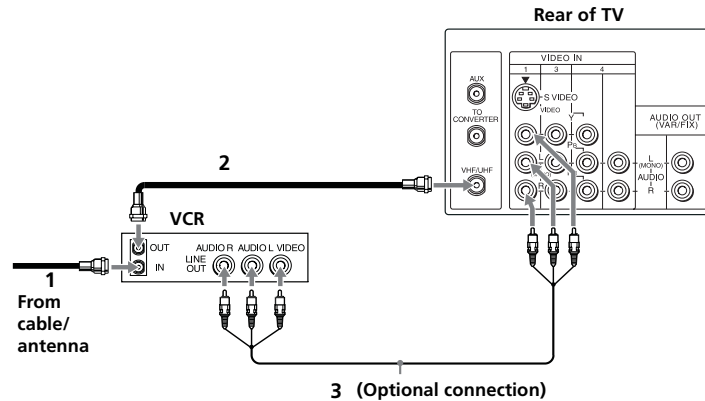
When using PIP, you cannot view the AUX input in the window picture.

4

Connecting Your TV

Connecting Additional Equipment

TV and VCR



- 1** Connect the coaxial cable from your TV antenna or cable service to the IN jack on your VCR.
- 2** Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF jack on the TV.

To watch video programs from your VCR, tune your TV to channel 3 or 4 (as set on the rear of your VCR).

(Optional connection)

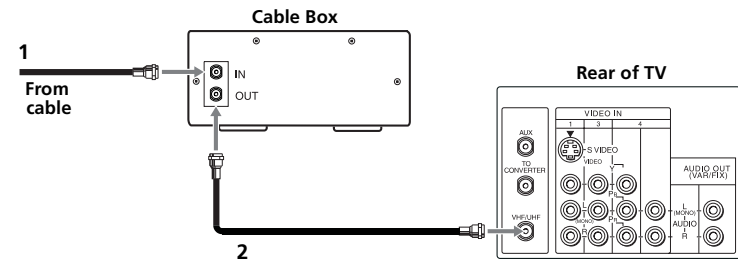
- 3** If your VCR is equipped with video outputs, you can get better picture quality by connecting A/V cables (not supplied) from AUDIO and VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV.

For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, the audio cables must still be connected.

You can use the button to switch between the VHF/UHF and VIDEO inputs.

Operating Instructions

TV and Cable Box



- 1** Connect the coaxial cable from your cable service to the IN jack on your cable box.
- 2** Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the VHF/UHF jack on the TV.


To view channels from your cable box, tune your TV to channel 3 or 4 (as set on the rear panel of your cable box) and use the cable box's remote control to change channels.

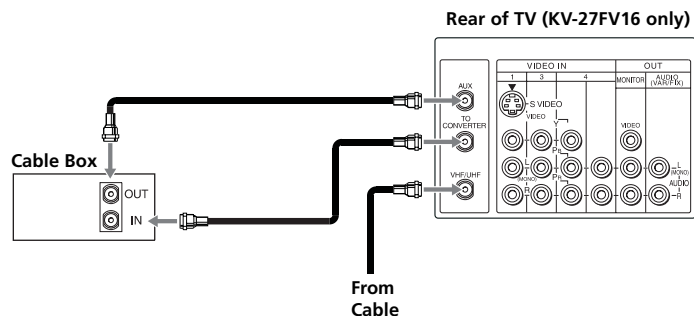
If you will be controlling all channel selection through your cable box, you should consider using the Channel Fix feature, (see page 26).


Connecting Your TV

TV, Cable box, and Cable

KV-27FS16, KV-27FV16, KV-32FS16, KV-29FV16 only

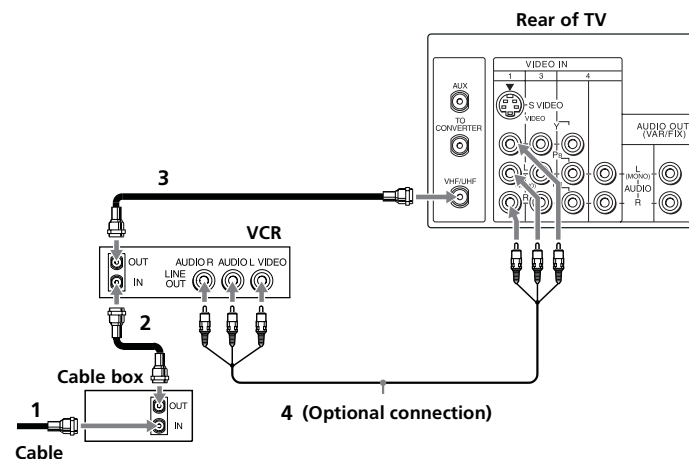
For this set up, you can switch between scrambled channels (through your cable box) and normal (CATV) channels by pressing .




 When using PIP, the AUX input cannot be viewed in the window picture.

Operating Instructions

TV, VCR, and Cable box






- 1 Connect the coaxial cable from your cable service to the IN jack on your cable box.
- 2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the IN jack on your VCR.
- 3 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF jack on the TV.

 If you will be controlling all channel selection through your cable box, you should consider using the Channel Fix feature, (see page 26).

(Optional connection)

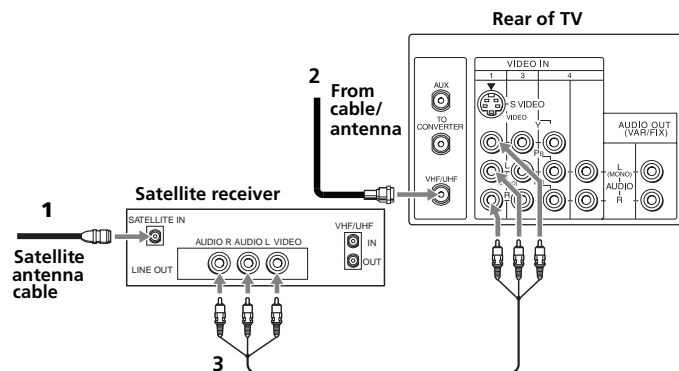
- 4 If your VCR is equipped with video outputs, you can get better picture quality by connecting A/V cables (not supplied) from AUDIO and VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV.

 For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, the audio cables must still be connected.

 You can use the  button to switch between the VHF/UHF and VIDEO inputs.

Connecting Your TV

TV and Satellite Receiver



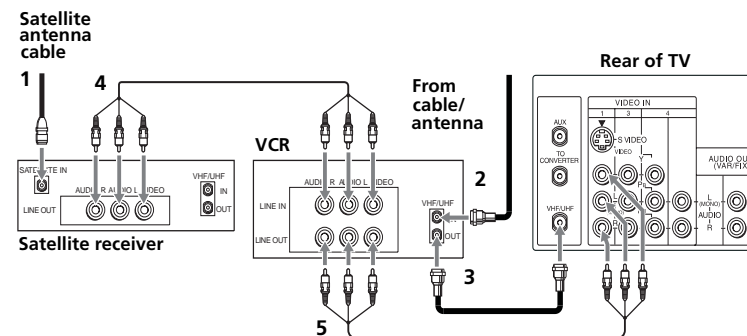
- 1 Connect the cable from your satellite antenna to SATELLITE IN on your satellite receiver.
- 2 Connect the coaxial cable from your cable or antenna to the VHF/UHF jack on your TV.
- 3 Using A/V cables, connect AUDIO and VIDEO OUT on your satellite receiver to AUDIO and VIDEO IN on your TV.

For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, the audio cables must still be connected.

You can use the button to switch between the VHF/UHF and satellite receiver inputs.

Operating Instructions

TV, Satellite Receiver, and VCR



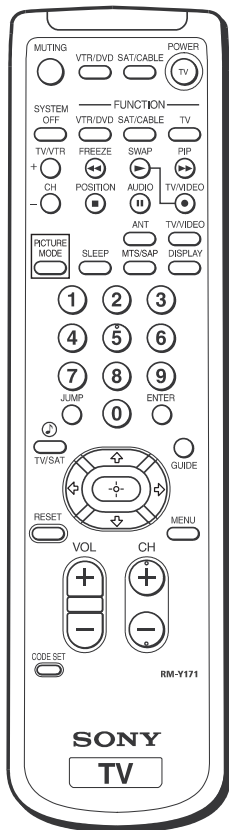
- 1 Connect the cable from your satellite antenna to SATELLITE IN on your satellite receiver.
- 2 Connect the coaxial cable from your cable or antenna to the IN jack on your VCR.
- 3 Using a coaxial cable, connect the OUT jack on your VCR to the VHF/UHF jack on your TV.
- 4 Using A/V cables, connect AUDIO and VIDEO OUT on your satellite receiver to AUDIO and VIDEO IN on your VCR.
- 5 Using A/V cables, connect AUDIO and VIDEO OUT on your VCR to AUDIO and VIDEO IN on your TV.

To view from the satellite receiver or VCR, select the video input to which your satellite receiver or VCR is connected by pressing on the remote control.

Using the Remote Control and Basic Functions

This section shows you how to use the more advanced buttons on the remote control and how to use the on-screen menus.

Using the Remote Control



Button	Description
POWER	Press when you want to turn connected equipment on and off.
FUNCTION	Press when you want to control connected equipment with your remote control.
MUTING	Instantly turns off the sound. Press again or press to restore sound.
SYSTEM OFF	Powers off all Sony equipment at once, (may not work with older equipment).
TV/VIDEO	Cycles through available video inputs.
ANT	Press to change the VHF/UHF input to the AUX input (KV-27FS16, KV-27FV16, KV-32FS16 only).
TV/VTR	Press when you are finished using a VCR and you want to switch to the TV input. Your VCR power will remain on.
	Moves the cursor in the on-screen menus. Press the arrow buttons to move the cursor. Press the center button to select or access an option.
PICTURE MODE	Cycles through the available Video Mode settings.

The remote control shown (RM-Y171) is for KV-27FV16. Your remote control may not look like the one illustrated.

Using the Remote Control and Basic Functions

SLEEP	Turns the TV off automatically in approximately 15, 30, 45, 60, 90, or 120 minutes. Cancel by pressing until SLEEP OFF appears.
MTS/SAP	Cycles through the Multi-channel TV Sound (MTS) options: Stereo, Mono, and Auto-SAP (Second Audio Programming).
DISPLAY	Press once to show current time, (if set) and channel number.
JUMP	Cycles through available Steady Sound settings, (see page 23). Alternates between the last two channels selected with the 0 - 9 buttons.
GUIDE	Brings up the custom guide of your satellite receiver.
MENU	Displays the on-screen menu. Press again to exit the menu at any time.
RESET	Press to return to factory settings while in an on-screen menu.
CODE SET	Use to program your remote control to operate connected video equipment, (see page 36).


For information on Picture in Picture (PIP) operation buttons, see page 17.

If you lost your remote control, see page 40.














Other Information

Troubleshooting

If you are having a problem with your TV, try the suggestions below. If the problem persists, contact your nearest Sony dealer.

No picture, no sound	<input type="checkbox"/> Make sure the power cord is plugged in.
	<input type="checkbox"/> If red light is flashing on the front of your TV for more than a few minutes, disconnect and reconnect the power cord to restore the TV. If the problem continues, call your local service center.
	<input type="checkbox"/> Check the TV/VIDEO settings: when watching TV, set to TV; when watching video equipment, set to VIDEO (page 14).
	<input type="checkbox"/> Make sure the batteries have been inserted correctly into the remote control (page 2).
Poor or no picture, good sound	<input type="checkbox"/> Try another channel, it could be station trouble.
	<input type="checkbox"/> Adjust Picture in the Video menu (page 22).
	<input type="checkbox"/> Adjust Brightness in the Video menu (page 22).
Good picture, no sound	<input type="checkbox"/> Check the antenna and/or cable connections (page 3).
	<input type="checkbox"/> Press  so that MUTING disappears from the screen (page 14).
No color	<input type="checkbox"/> Check your Audio settings. Your TV may be set to Auto-SAP (page 24).
	<input type="checkbox"/> Adjust Color in the Video menu (page 22).
No signal	<input type="checkbox"/> Check the Cable setting in the Channel Setup menu (page 25).
	<input type="checkbox"/> Check the antenna and/or cable connections (page 3).
	<input type="checkbox"/> Make sure the channel selected is currently broadcasting.
Dotted lines or stripes	<input type="checkbox"/> Adjust the antenna.
	<input type="checkbox"/> Move the TV away from other electronic equipment. Some electronic equipment can create electrical noise, which can interfere with TV reception.
Double images or ghosts	<input type="checkbox"/> Check your outdoor antenna or call your cable service.

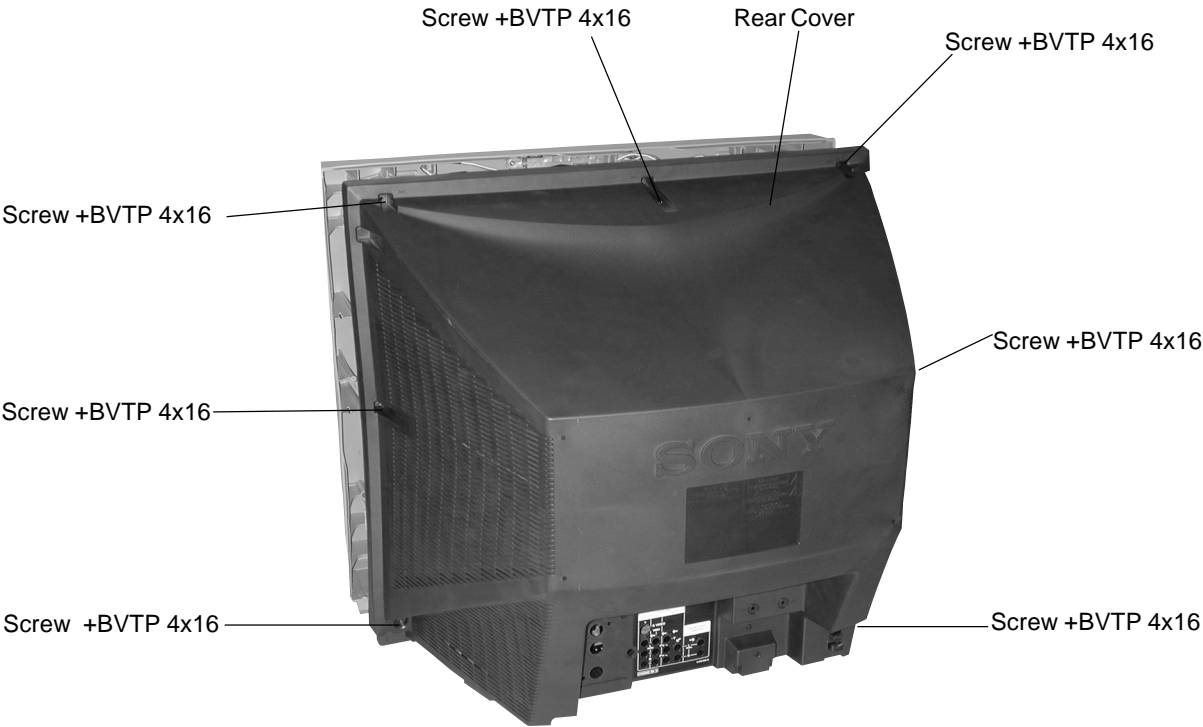
Operating Instructions

Cannot receive higher number channels (UHF) when using an antenna	<input type="checkbox"/> Make sure Cable is set to OFF in the Channel Setup menu (page 25).
	<input type="checkbox"/> Perform Auto Program to add channels that are not presently in the memory (page 16).
Cable stations don't seem to work	<input type="checkbox"/> Make sure Cable is set to ON in the Channel Setup menu (page 25).
	<input type="checkbox"/> Perform Auto Program to add channels that are not presently in the memory (page 16).
Remote control does not operate	<input type="checkbox"/> Batteries could be weak. Replace them (page 2).
	<input type="checkbox"/> Move the TV 3-4 feet away from fluorescent lights.
The TV needs to be cleaned	<input type="checkbox"/> Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.
Lost password for Parental Control	<input type="checkbox"/> In the password screen, enter the following master password: 4357. After using the master password, you must create a new password, it cannot be used to unlock currently blocked channels.
You lost your remote control	<input type="checkbox"/> You can use the front A/V panel controls to access the menu. Press  to open the menu. Use the  or  buttons on the front A/V panel instead of the  or  buttons on the remote control. Use the  button on the front A/V panel instead of the  ,  , and  buttons on the remote control. Press  again when the setting or adjustment is complete. Contact your nearest Sony dealer to order a replacement.
Cannot access other menus when using the Basic Menu	<input type="checkbox"/> If you use the  button to close the Basic menu, only the Basic menu appears when you press  again. To have access to the other menus, use the  button to select Advance Menu (page 35).

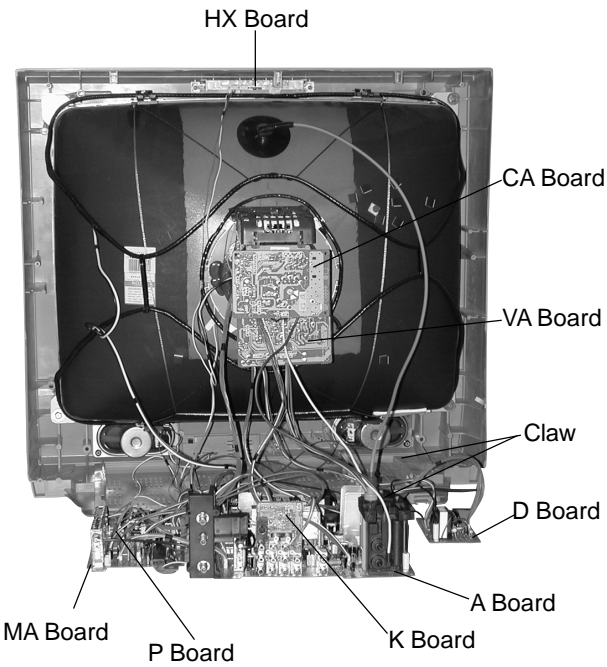
If, after reading these Operating Instructions, you have additional questions related to the use of your Sony television, please call our Direct Response Center at 1-800-222-SONY (7669) (U.S. residents only) or (416) 499-SONY (7669) (Canadian residents only).

**SECTION 2
DISASSEMBLY**

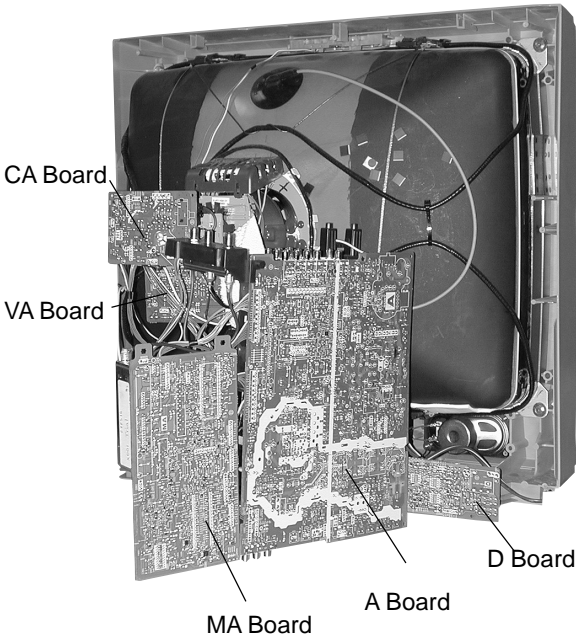
2-1. REAR COVER REMOVAL



2-2. CHASSIS ASSEMBLY REMOVAL



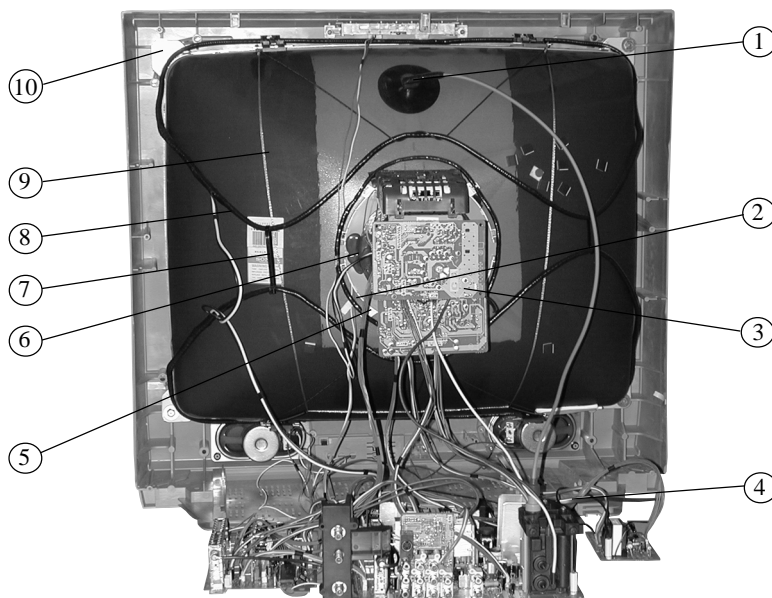
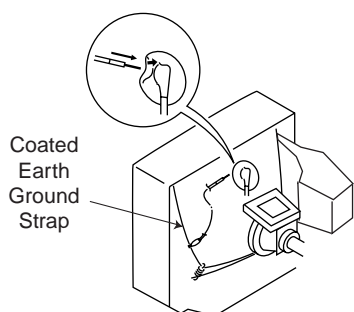
2-3. SERVICE POSITION



2-4. PICTURE TUBE REMOVAL

WARNING: BEFORE REMOVING THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT **before** attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.



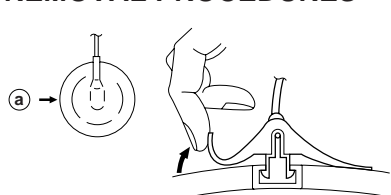
1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the deflection yoke, neck assembly, degaussing coils and CRT grounding strap.
3. Remove the CA Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the neck assembly fixing screw and remove.
6. Loosen the deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the degaussing coil holders.
8. Remove the degaussing coils.
9. Remove the CRT grounding strap and spring tension devices.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT [Take care not to handle the CRT by the neck].

ANODE CAP REMOVAL

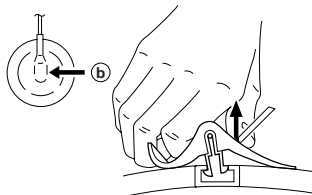
WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electrical shock, discharge the CRT **before** attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.

NOTE: After removing the anode, short circuit the anode of the picture tube and the anode cap to either the metal chassis, CRT shield, or carbon painted on the CRT.

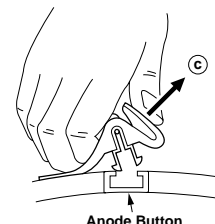
REMOVAL PROCEDURES



- ① Turn up one side of the rubber cap in the direction indicated by arrow (a).



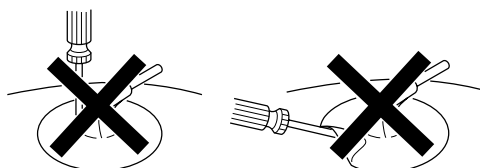
- ② Use your thumb to pull the rubber cap firmly in the direction indicated by arrow (b).



- ③ When one side of the rubber cap separates from the anode button, the anode cap can be removed by turning the rubber cap and pulling it in the direction of arrow (c).

HOW TO HANDLE AN ANODE CAP

- ① Do not use sharp objects which may cause damage to the surface of the anode cap.
- ② To avoid damaging the anode cap, do not squeeze the rubber covering too hard. A material fitting called a shatter-hook terminal is built into the rubber.
- ③ Do not force turn the foot of the rubber cover. This may cause the shatter-hook terminal to protrude and damage the rubber.



SECTION 3 SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or when a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Set the controls as follows unless otherwise noted:

VIDEO MODE: STANDARD

PICTURE control: Normal

BRIGHTNESS control: Normal

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

Note: Test equipment required:

- Color Bar Pattern Generator
- Degausser
- DC Power Supply
- Digital Multimeter

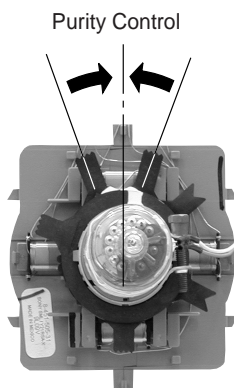
3-1. BEAM LANDING

Before beginning adjustment procedure:

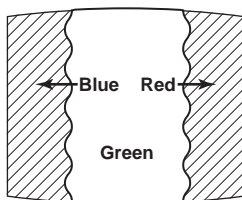
1. Degauss the entire screen.
2. Feed in the white pattern signal.

Adjustment Procedure

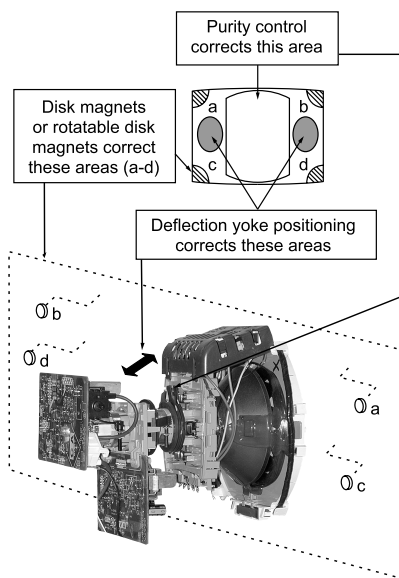
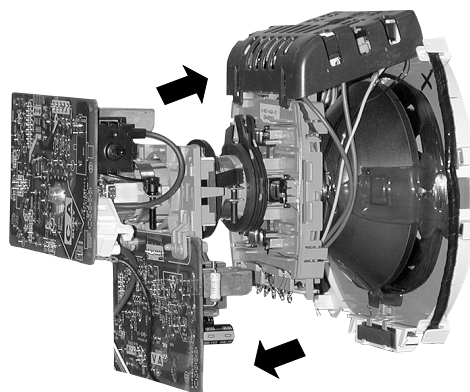
1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw and set the purity control to the center as shown below.



3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward and adjust the purity control so that green is in the center and red and blue are at the sides evenly.



5. Move the deflection yoke forward and adjust so that the entire screen becomes green.
6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. If landing at the corner is not right, adjust by using the disk magnets.



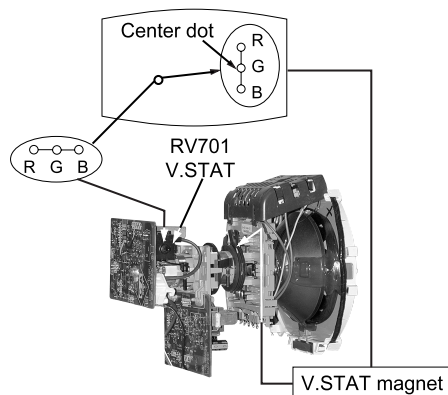
3-2. CONVERGENCE

Before starting convergence adjustments:

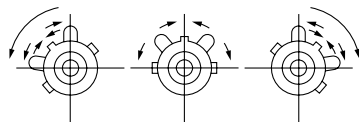
1. Perform FOCUS, V.LIN AND V.SIZE adjustments.
2. Set BRIGHTNESS control to minimum.
3. Feed in dot pattern.

Vertical Static Convergence

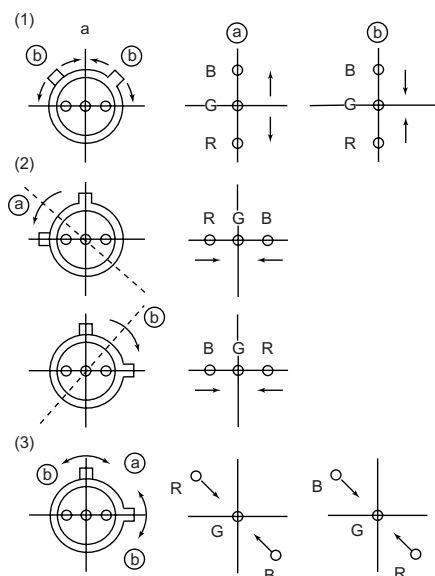
1. Adjust V-STAT magnet to converge red, green and blue dots in the center of the screen (Vertical movement adjust V-STAT RV 701 to converge).



2. Tilt the V-STAT magnet and adjust static convergence to open or close the V-STAT magnet.



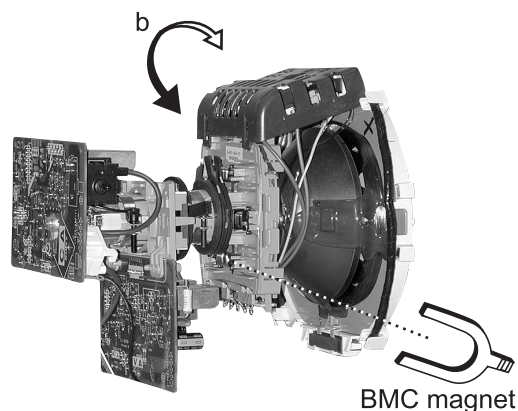
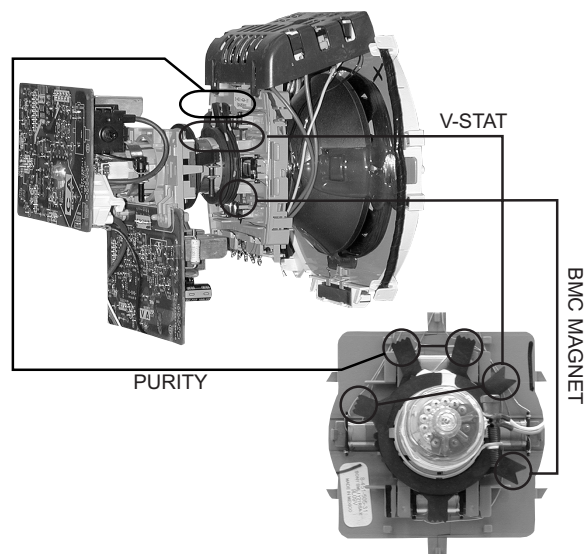
When the V-STAT magnet is moved in the direction of arrows a and b, red, green, and blue dots move as shown below:



Horizontal Static Convergence

If the blue dot does not converge with the red and green dots, perform the following:

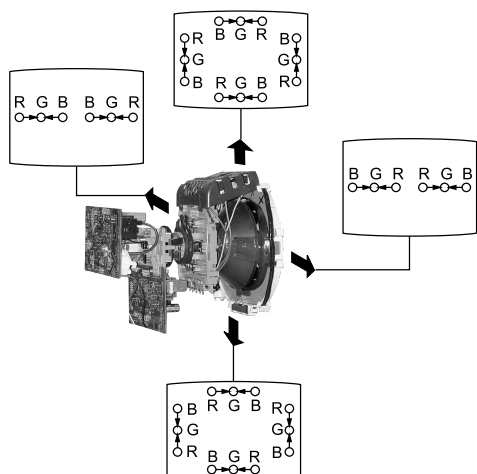
1. Move BMC magnet (a) to correct insufficient H. Static convergence.
2. Rotate BMC magnet (b) to correct insufficient V. Static convergence.
3. After adjusting the BMC magnet, repeat Beam Landing Adjustment.



Dynamic Convergence Adjustment

Before performing this adjustment, perform Horizontal and Vertical Static Convergence Adjustment.

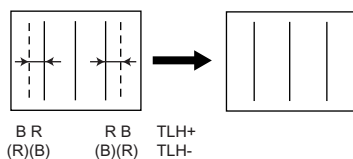
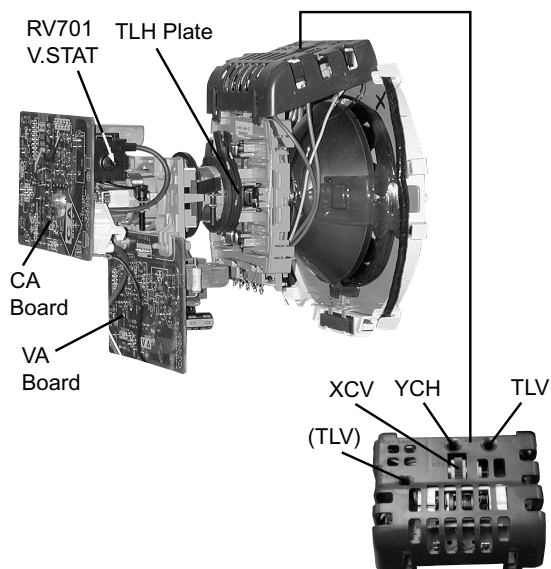
1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown on the following page.



4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

TLH Plate Adjustment

1. Input crosshatch pattern.
2. Adjust PICTURE QUALITY to standard, PICTURE and BRIGHTNESS to 50%, and OTHER to standard.
3. Adjust the Horizontal Convergence of red and blue dots by tilting the TLH plate on the deflection yoke.

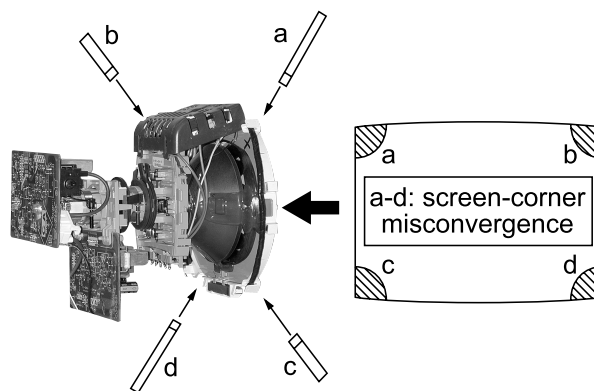


4. Adjust XCV core to balance X axis.
5. Adjust YCH VR to balance Y axis.
6. Adjust vertical red and blue convergence with V.TILT (TLV VR).

Note: Perform adjustments while tracking items 1 and 2.

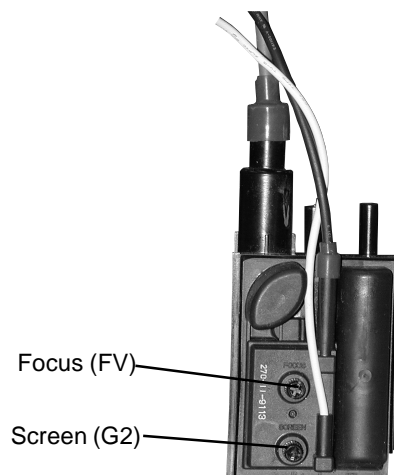
Screen-Corner Convergence

1. Affix a permalloy assembly corresponding to the misconverged areas.



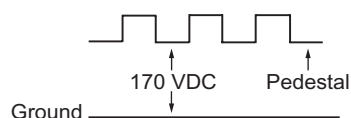
3-3. FOCUS

1. Adjust FOCUS control for best picture.



3-4. SCREEN (G2)

1. Input a dots pattern.
2. Set the PICTURE and BRIGHTNESS controls at minimum and COLOR control at normal.
3. Adjust SBRT, GCUT, BCUT in service mode with an oscilloscope as shown below so that voltages on the red, green, and blue cathodes are 170 VDC.



4. Observe the screen and adjust SCREEN (G2) VR in FBT to obtain the faintly visible background of dot signal.

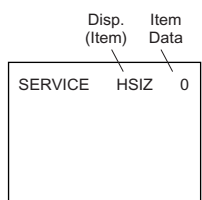
3-5. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

Service Mode Procedure

1. Standby mode (power off).
2. **[Display]** → Channel **[5]** → Sound volume **[+]** → Power on the Remote Commander (press each button within a second).

Service Adjustment Mode In

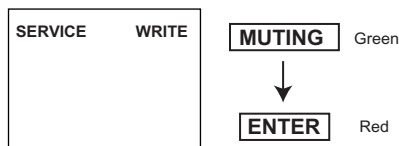
1. The CRT displays the item being adjusted.



2. Press **[1]** or **[4]** on the Remote Commander to select the item.
3. Press **[3]** or **[6]** on the Remote Commander to change the data.
4. Press **[MUTING]** then **[ENTER]** to save into the memory.

Service Adjustment Mode Memory

Turn set off then on to exit service adjustment mode.






3-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal with burst.
2. Set to Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Adjust with SBRT if necessary.
5. Select GCUT and BCUT with **[1]** and **[4]**.
6. Adjust with **[3]** and **[6]** for the best white balance.
7. Set PICTURE and BRIGHTNESS to maximum.
8. Select GDRV and BDRV with **[1]** and **[4]**.
9. Adjust with **[3]** and **[6]** for the best white balance.
10. To write into memory, press **[MUTING]** then **[ENTER]**.

SECTION 4
SAFETY RELATED ADJUSTMENTS

4-1.  R564 CONFIRMATION METHOD
(HV HOLD-DOWN CONFIRMATION) AND
READJUSTMENTS

The following adjustments should always be performed when replacing the following components which are marked with  on the schematic diagram:

Part Replaced ()	Adjustment ()
DY, T505, CRT, IC501, C507, C520, C505, C509, C515, T504, T503, C551, L510, C546, C537, C547, D517, D518, D519, R560, R561, R562, R563, R565, R566, R567, R525 A Board	HV HOLD-DOWN R564
IC301 MA Board	


Preparation Before Confirmation

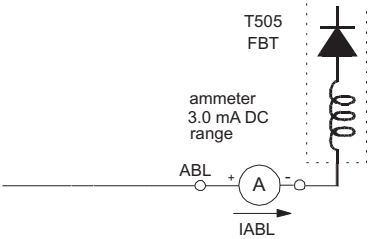
- Using a Variac, apply AC input voltage: $120-220 \pm 2$ VAC.
- Turn the POWER switch ON.
- Input a white signal and set the PICTURE and BRIGHTNESS controls to maximum.
- Confirm that the voltage between C546 (+) or TP503 and ground is more than 21.0 VDC.

Hold-Down Operation Confirmation


- Connect the current meter between Pin 11 of the FBT (T505) and the PWB land where Pin 11 would normally attach. (See Figure 1 on the next page.)
- Input a dot signal and set PICTURE and BRIGHTNESS to minimum: $IABL = 1730 \pm 100 \mu A$.
- Confirm the voltage of A Board TP-600 is 135 ± 1.5 VDC.
- Connect the digital voltmeter and the DC power supply via diode 1SS119 to C546 (+) and ground. (See Figure 1 on the next page.)
- Increase the DC power voltage gradually until the picture blanks out.
- Turn DC power source off immediately.
- Read the digital voltmeter indication (standard $< 24.78+0,-0.1$ VDC).
- Input a white signal and set PICTURE and BRIGHTNESS to maximum: $IABL = 1730 \pm 100 \mu A$.
- Repeat steps 4 to 7.

Hold-Down Readjustment

If the setting indicated in step 2 of Hold-Down Operation Confirmation cannot be met, readjustment should be performed by altering the resistance value of R564 component marked with .



4-2. B+ VOLTAGE CONFIRMATION AND
ADJUSTMENT

Note: The following adjustments should always be performed when replacing the following components, which are marked with  on the schematic diagram on the A Board.

A BOARD: IC601, PH601

- Using a Variac, apply AC input voltage: 130 ± 2 VAC.
- Input a dot signal.
- Set the PICTURE and BRIGHTNESS controls to minimum.
- Confirm that the voltage of A Board TP-600 is < 136.5 VDC.
- If step 3 is not satisfied, replace the components listed above, then repeat steps 1–3.

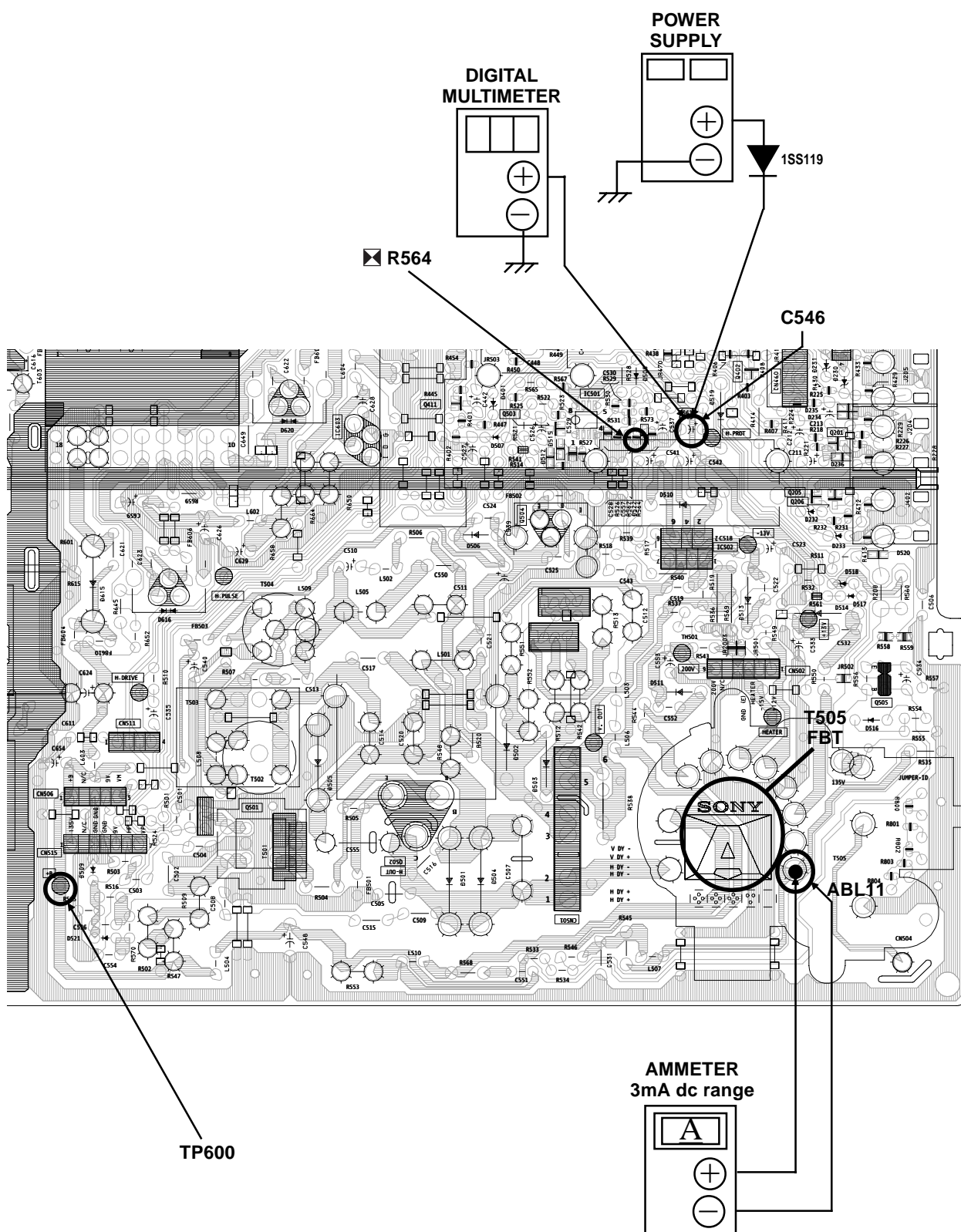


Figure 1

SECTION 5 CIRCUIT ADJUSTMENTS

ELECTRICAL ADJUSTMENTS BY REMOTE COMMANDER

Use the Remote Commander (RM-Y168 or RM-Y169) to perform the circuit adjustments in this section.

NOTE: Test Equipment Required:

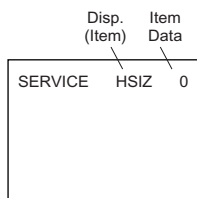
- Pattern generator
- Frequency counter
- Digital multimeter
- Audio oscillator

5-1. SETTING THE SERVICE ADJUSTMENT MODE

1. Standby mode (power off).
2. **Display** → Channel **5** → Sound volume **+** → Power on the Remote Commander (press each button within a second).

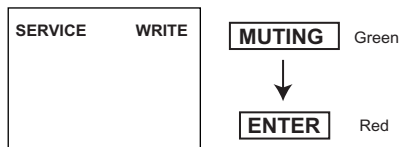
Service Adjustment Mode On

1. The CRT displays the item being adjusted.

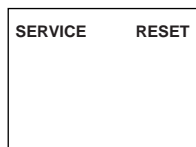


2. Press **1** or **4** on the Remote Commander to select an item.
3. Press **3** or **6** on the Remote Commander to change the data.
4. Press **MUTING** then **ENTER** to save into the memory.

Service Adjustment Mode Memory



1. Press **8** then **ENTER** on the Remote Commander to initialize.



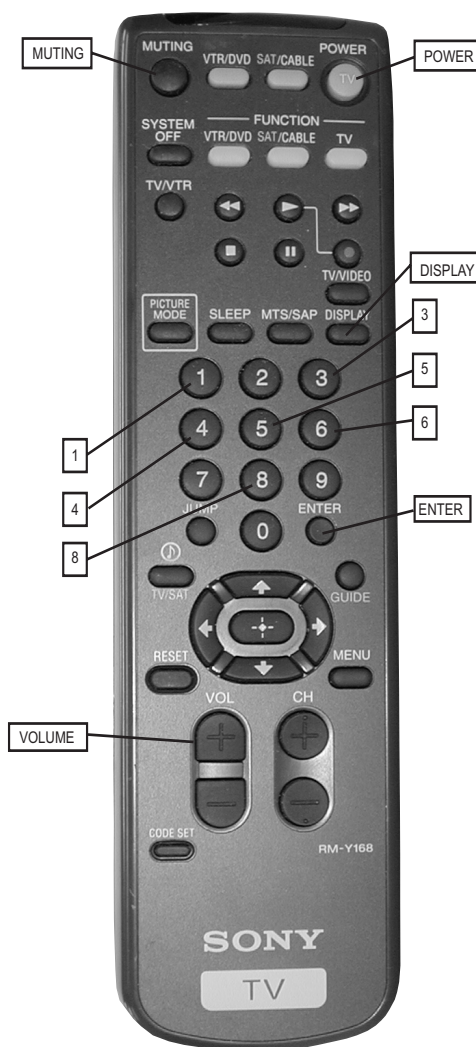
Carry out step 1 when adjusting IDs 0–4 and when replacing and adjusting IC003.

2. Turn set off then on to exit service adjustment mode.

5-2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, remove the power plug from the AC outlet, then plug it in again.
2. Turn the power switch ON and set to service mode.
3. Call the adjusted items again to confirm they were adjusted.

5-3. ADJUSTMENT BUTTONS AND INDICATORS



RM-Y168

Adjustment Items

Reg #	ITEM	FUNCTION	RANGE	FIX DATA	NTSC	PAL M	PAL N	VIDEO	RF	AVERAGE DATA
1	HSIZ	Horizontal Size Adjustment	0-63		15	12	7			14
2	HPOS	Horizontal Position Adjustment	0-63		13	8	9			17
3	VBOW	Vertical Line Bowing Adj.	0-15		9	10	8			6
4	VANG	Vertical Line Bowing Slant Adj.	0-15		8	10	9			12
5	VTRP	TRAPEZIUM	0-31		19	14	14			16
6	HTRP	Horiz. Trapezoid	0-15		6	7	5			0
7	TROT	Tilt Correction	0-63		31	31	31			31
8	PAMP	Horizontal PIN distortion Adj.	0-63		19	19	21			20
9	UPIN	Upper PIN Distortion Adj.	0-63		34	33	36			35
10	LPIN	Lower PIN Distortion Adj.	0-63		32	34	40			34
11	VSIZ	Vertical Size Adjustment	0-63		32	43	29			38
12	VPOS	Vertical Position Adj.	0-63		30	30	32			29
13	VLIN	Vertical lineality Adj.	0-15		3	6	10			5
14	SCOR	Vertical "S" Correction Adjustment	0-15		6	8	10			7
15	VZOM	16:9 CRT Z Mode on/off	0-1	0						0
16	EHT	Vertical High-Voltage Compensation	0-15	5						5
17	ASP	Aspect Ratio control	0-63	47						47
18	SCRL	16:9 CRT Z Mode Trans. Scroll	0-63	31						31
19	HBLK	Horizontal Blanking on/off	0-1	1						1
20	LBLK	Left Blanking Adjustment	0-15	13						14
21	RBLK	Rigth Blanking Adjustment	0-15	8						8
22	HDW	Horizontal Drive Pulse Width		1						1
23	EWDC	"Parabola" EW, D.C. Adjustment	0-1	0						0
24	LVLN	Lower Screen BTM Vertical Line Adj.	0-15	0						0
25	UVLN	Uppe Screen BTM Vertical Line Adj.	0-15	0						0
26	INTL	INTERLACE	0-3	0						0
27	G2SW		0-1	0						0
28	G2LV		0-7	0						0
29	HOSC	Horizontal VCO Oscillation Freq.	0-15	7						7
30	VSS	Vertical Sync Slice Level	0-3	0						0
31	HSS	Horizontal Sync Slice Level	0-1	0						0
32	HMSK	For Macro Vision	0-1	0						0
33	VTMS	Select Signal VTIM Pin	0-3	0						0
34	CDMD	Vertical Count Down Mode Switching	0-3		*	*	*	3		3
35	AFC	AFC Loop Gain Switching	0-3	0						0
36	FIFR	Field Frequency	0-3	3						3
37	VBLK	VBLKW	0-3	0						0
38	REFP		0-1	0						0
39	JPSW	JUMPSW	0-1	MENU						0
40	RDRV	R Output Drive control	0-63	41						38
41	GDRV	G Output Drive control	0-63	25						28
42	BDRV	B Output Drive control	0-63	25						26
43	RCUT	R Output Cutoff control	0-63	31						31
44	GCUT	G Output Cutoff control	0-63	15						13
45	BCUT	B Output Cutoff control	0-63	12						14
46	SCON	SUB CONT	0-15	8						10
47	SHUE	Sub HUE adjustment	0-15	16						16
48	SCOL	Sub COLOR adjustment	0-15	18						18
49	SBRT	Sub BRIGHTNESS adjustment	0-31	16	16	16	16			17
50	CHUE	SUB COLOR (RF)	0-31	7						6
51	CCOL	SUB COLOR (RF)	0-31	7						4
52	UOFS	YUV U OFFSET	0-15	7	7	7	7			7
53	VOFS	YUV V OFFSET	0-15	7						7
54	RON	R Output on/off	0-1	1						1
55	GON	G Output on/off	0-1	1						1
56	BON	B Output on/off	0-1	1						1
57	AXPL	Axis PAL	0-1	0						0
58	AXNT	Axis NTSC	0-1	1						1
59	CBPF	Chroma BPF on/off	0-1	1						1
60	CTRP	Y TRAP FILTER on/off	0-1	1						1
61	COFF	Color On/off	0-1	0						0
62	KOFF	Set Color Killer	0-1	0						0
63	SSHP	Sub SHARPNESS	0-15	5						5
64	SHPF	SHARPNESS Circuit Fo	0-3	Palette						2
65	PREL	Pre-Shoot/ Over-Shoot	0-1	1						0
66	Y-DC	DC transimtion Ratio Switching	0-3	Palette						2
67	GAMM	Gamma Correction	0-3	Palette						2
68	ABLM	ABL Mode Switch	0-1	1						1
69	VTH	ABL CD VHT Switching	0-1	1						1
70	YDEL	Y Delay Time Control	0-15	7						7
71	NCOL	No Color ID	0-1	1						1
72	FSC	FSC Out on/off	0-1	1						1
73	K-ID	Killer ID Control on/off	0-1	0						0
74	GDOF		0-31	3						3
75	BDOF		0-31	16						16
76	GCOF		0-31	16						16
77	BCOF		0-31	7						7
78	SYSC	Color System	0-7	4						4
79	VENH	Vertical Enhancement	0-7	Palette						3

Reg #	ITEM	FUNCTION	RANGE	FIX DATA	NTSC	PAL M	PAL N	VIDEO	RF	AVERAGE DATA
80	PDSO	PDS OFF	0-1	0						0
81	CK	CK	0-1	0						0
82	VNL	VNL	0-15	3						3
83	HPK	HPK	0-1	0						0
84	HPKO	HPK OFF	0-1	Palette						0
85	CORE	CORE	0-3	2						1
86	TRAP	TRAP	0-1	1						1
87	CHTR	CH TRAP	0-1	0						0
88	CBPF	CBPF	0-1	1						1
89	ENHO	ENHOFF	0-1	0						0
90	NMRD	NMRD	0-3	0						0
91	YAPS	YAPS	0-3	3						3
92	CLKS	CLKS	0-3	0						0
93	NSTD	NSTD	0-3	0						0
94	MSS	MSS	0-3	0						0
95	KILS	KILS	0-3	1						1
96	ADIN	ADIN	0-1	0						0
97	EXCS	EXCSS	0-3	1						1
98	CPP	CPP	0-3	2						2
99	HDP	HDP	0-7	4						4
100	CDL	CDL	0-7	4						4
101	DYCR	DYCOR	0-15	2						2
102	DYGN	DYGAIN	0-15	10						10
103	DCCR	DCCOR	0-15	3						3
104	DCGN	DCGAIN	0-15	6						6
105	YNRL	YNRLIM	0-3	1						1
106	CNRL	CNRLIM	0-3	1						1
107	WSC	WSC	0-3	1						1
108	VTRH	VTRH	0-3	1						1
109	VTRR	VTRR	0-3	1						1
110	LDSR	LDSR	0-3	2						2
111	VAPG	VAPGAIN	0-7	3						3
112	VAPI	VAPINV	0-31	6						6
113	TEST	TEST	0-1	0						0
114	YPFT	YPFT	0-3	3						3
115	YPFG	YPFG	0-15	7						7
116	CC3N	CC3N	0-1	0						0
117	SELD	SELD	0-1	1						1
118	D2GN	D2GAIN	0-7	5						5
119	YHCR	YHCOR	0-3	0						0
120	YPFC	YPFCOR	0-1	0						0
121	SHT	SHT	0-3	0						0
122	MVT	MVT	0-1	0						0
123	OTT	OTT	0-1	0						0
124	CL2D	CL2D	0-1	1						1
125	CLKG	CLKGGT	0-1	0						0
126	HPLL	HPLLFS	0-1	1						1
127	BPLL	BPLLFS	0-1	0						0
128	FSCF	FSCFG	0-1	0						0
129	PLLS	PLLS	0-1	1						1
130	KILR	KILR	0-15	3						3
131	HSSL	HSSL	0-15	12						12
132	VSSL	VSSL	0-15	8						8
133	BGPS	BGPS	0-15	4						4
134	BGPW	BGPW	0-15	10						10
135	ADCK	ADCLKS	0-3	3						3
136	NDSW	NDSW	0-1	1						1
137	PFRN	FREE_RUN	0-1	0						0
138	PRVS	RVS	0-1	0						0
139	PCON	CONTRAST	0-127	45						45
140	PUCO	U-DAC	0-127	16						16
141	PVCO	V-DAC	0-127	24						24
142	PHUE		0-31	15						15
143	PKIL	KILLER	1	0						0
144	PSEP	EXT_SC_SEL	0-3	2						2
145	PHIM		0-1	0						0
146	PSUB		0-1	0						0
147	PBGS	BG_START	0-63	14						14
148	PDL0		0-15	6						6
149	PDL1		0-15	13						13
150	PBRT	Y_OFFSET	0-31	25						25
151	PVP1			0						0
152	PUP1			0						0
153	PVP2			2						0
154	PUP2			2						0
155	PVP3			2						0
156	PUP3			2						0
157	PACS	SET_ACC	0-1	1						1
158	PSDL	SYNC_DELAY	0-3	0						0

Reg #	ITEM	FUNCTION	RANGE	FIX DATA	NTSC	PAL M	PAL N	VIDEO	RF	AVERAGE DATA
159	PDCO		0-3	0						0
160	PCGA	C_GAIN	0-1	1						1
161	PAAF		0-1	0						0
162	PSU2		0-1	0						0
163	PCVF		0-1	0						0
164	PBIT	BITSEL	0-1	0						0
165	PAFC	AFCBITSEL	0-1	0						0
166	PACC	ACC_LEVEL	0-63	22						22
167	PBUR	BURST_CLK	0-1	0						0
168	PEVE	EVENUPRA	0-1	0						0
169	PINW	INV_WFF	0-1	0						0
170	PINR	INV_REF	0-1	0						0
171	PREF	RFF_FIX	0-1	0						0
172	PARE	AUTO_REF	0-1	1						1
173	PAVE	AVERAGE	0-1	0						0
174	PFRA	FREE_RUN_ADJ	0-15	0						0
175	PPAL	SUB_PALM_JUDGE	0-255	0						0
176	PHPO		0-31	6						6
177	PVPO		0-31	22						22
178	PHTI	HT	0-15	7						9
179	PHAJ	ADJ	0-15	1						1
180	PBGY	BGY	0-15	0						0
181	PCRO	CROSS_SEL	0-1	0						0
182	PPAR	PALRY	0-63	2						2
183	PHPF	HPFOFF	0-1	0						0
184	PFSC	FSC_OUTPUT	0-1	0						0
185	PVCH	SET_VCHIP	0-1	0						0
186	PVON	VCHIP_ONLY	0-1	1						1
187	PVLN	LINE_NUM	0-31	17						17
188	PVSB	STB_DLY	0-255	64						64
189	PVLV	L_LEVEL	0-255	130						130
190	SBAL	Sub Balance	0-7	5						5
191	SBAS	Sub Bass	0-7	0						0
192	STRE	Sub Treble	0-7	3						3
193	BBEL	BBE Low	0-15	0	0					0
194	BBEH	BBE High	0-15	0	0					0
195	BBE	BBE	0-1	0	0					0
196	AUX	SRS, Simulated	0-3	0	0					0
197	DISP	O.S.D Display position	0-127	20						34
198	HCLW	Horizontal Count lower limit	0-255	16				16		16
199	HCHG	Horizontal Count High limit	0-255	64	0	0		64		64
200	ID0		0-255	89			1			See ID Map
201	ID1		0-255	31						See ID Map
202	ID2		0-255	79						See ID Map
203	ID3		0-255	146						See ID Map
204	ID4		0-255	137						See ID Map
205	ID5		0-255	19						See ID Map
206	ID6		0-255	0						See ID Map

* CDMD = 3 For US & CND, CDMD = 0 For Others

Notes:

No. 1–206 show the order that each adjustment mode may be selected while in service mode.

Data Range shows the range of possible settings for each adjustment mode.

Initial Data shows the standard settings for each adjustment mode.

SERVICE	ID0	25
---------	-----	----

Feature ID Map

	Destination	ID-0	ID-1	ID-2	ID-3	ID-4	ID-5	ID-6
KV-27FS12	(US)	89	31	79	146	137	19	0
KV-27FS12	(CND)	89	31	79	178	137	19	0
KV-27FS16	(US)	89	31	79	146	137	19	7
KV-29FS12	(E)	17	31	223	130	233	19	0
KV-29FS12C	(E)	17	31	223	130	233	19	0

5-4. MA BOARD ADJUSTMENTS

H. Frequency (Free Run) Check

1. Input a TV mode (RF) with no signal.
2. Connect a frequency counter to base of Q501 (TP-500 H. DRIVE) on the A Board.

3. Check H. Frequency for 15735 ± 200 Hz.

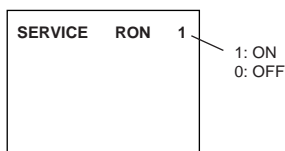
V. Frequency (Free Run) Check

1. Select video 1 with no signal input.
2. Set the conditions for a standard setting.
3. Connect the frequency counter to TP-502 (V OUT) or CN501 pin ⑥ (V DY+) and ground on the A Board.
4. Check that V. Frequency shows 60 ± 4 Hz.

Drive (RDRV)

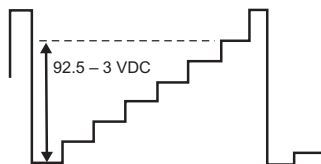
1. Input a color-bar signal and set the level to 75%.
2. Set in Standard mode.

3. Activate the Service Adjustment Mode. 4. Set both GON and BON items. Using [3] and [6]; set each to the following values. Leave RON set to "1".



R ON: ON (1)
G ON: OFF (0)
B ON: OFF (0)

5. Connect an oscilloscope probe to CA Board, J701 Pin 12 (KR) (Red Out) .
6. Select RDRV with [1] and [4] .
7. Adjust the value of RDRV with [3] and [6] for 92.5 ± 3 VDC.



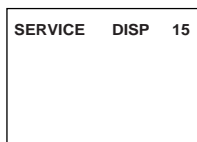
8. Reset GON and BON values to "1".

R ON: ON (1)
G ON: ON (1)
B ON: ON (1)

9. Press [MUTING] then [ENTER] to save into the memory.

Display Position Adjustment (DISP)

1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select DISP with [1] and [4] .
4. Adjust values of DISP with [3] and [6] to adjust characters to the center.
5. Write to memory by pressing [MUTING] then [ENTER] .
6. Check to see if the text is displayed on the screen.

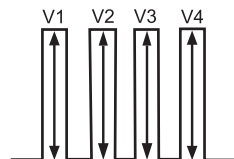


Sub Bright Adjustment (SBRT)

1. Input a monoscope signal.
2. Activate the Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Select the SBRT item with [1] and [4] .
5. Adjust the values of SBRT with [3] and [6] to obtain a faintly visible crosshatch.
6. Press [MUTING] then [ENTER] to save into the memory.

Sub Hue, Sub Color Adjustment (CHUE, CCOL)

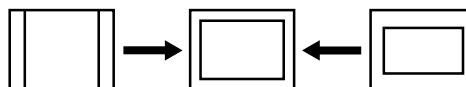
1. Input a color-bar signal.
2. Activate the Service Adjustment Mode.
3. Connect an oscilloscope probe to CA Board, CN1752 Pin ④.
4. Select the CHUE and CCOL item with [1] and [4] .
5. While showing the CHUE item, adjust the waveform with [3] and [6] until the second and third bars show the same level ($V2 = V3 < 0.1$ Vp-p).
6. While showing the CCOL item, adjust the waveform with [3] and [6] until the first and fourth bars show the same level ($V1 = V4 < 0.1$ Vp-p).



7. Press [MUTING] then [ENTER] to save into the memory.

V. Size Adjustment (VSIZ)

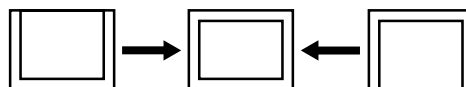
1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the VSIZ item with [1] and [4] .
4. Adjust value of VPOS with [3] and [6] for the best vertical center.
5. Press [MUTING] then [ENTER] to save into the memory.



V. Center Adjustment (VPOS)

Perform this adjustment after performing H. Frequency (Free Run) Check.

1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the VPOS item with [1] and [4] .
4. Adjust value of VPOS with [3] and [6] for the best vertical center.
5. Press [MUTING] then [ENTER] to save into the memory.



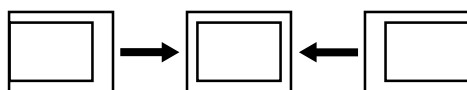
H. Center Adjustment (HPOS)

Perform this adjustment after performing H. Frequency (Free Run) Check.

1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the HPOS item with [1] and [4] .
4. Adjust the value of HPOS with [3] and [6] for the best

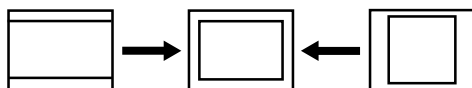
horizontal center.

- Press **MUTING** then **ENTER** to save into the memory.



H. Size Adjustment (HSIZ)

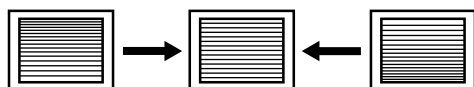
- Input a monoscope signal.
- Activate the Service Adjustment Mode.
- Select HSIZ with **1** and **4**.
- Adjust with **3** and **6** for the best horizontal size.
- Press **MUTING** then **ENTER** to save into the memory.



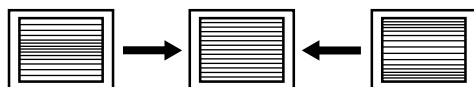
V. Linearity (VLIN), V. Correction (VSCO), Pin Amp (PAMP), and Horizontal Trapezoid (TRAP) Adjustments

- Input a crosshatch signal.
- Activate the Service Adjustment Mode.
- Select VLIN, VSCO, PAMP, and PPHA with **1** and **4**.
- Adjust with **3** and **6** for the best horizontal size.
- Press **MUTING** then **ENTER** to save into the memory.

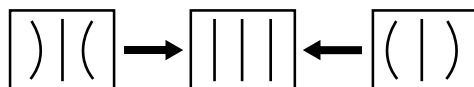
V LINEARITY (VLIN)



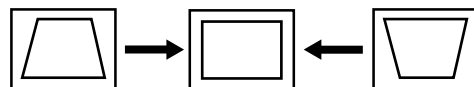
V CORRECTION (VSCO)



PIN AMP (PAMP)



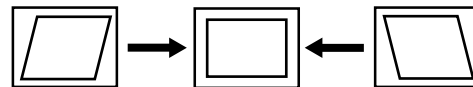
HORIZONTAL TRAPEZOID (TRAP)



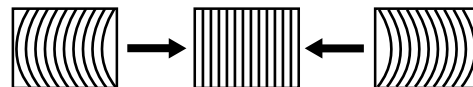
V. Angle (VANG), V. Bow (VBOW), Upper pin (UPIN) and Low Pin (LPIN) Adjustments

- Input a crosshatch signal.
- Activate the Service Adjustment Mode.
- Select VANG, VBOW, UPIN, and LPIN with **1** and **4**.
- Adjust with **3** and **6** for the best picture.
- Press **MUTING** then **ENTER** to save into the memory.

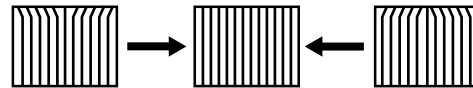
V ANGLE (VANG)



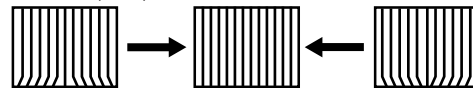
V BOW (VBOW)



UPPER PIN (UPIN)



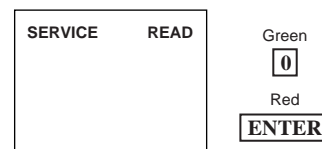
LOW PIN (LPIN)



Service Adjustment Mode Memory

- Change the value of the DCOL item to "1".
- After completing all adjustments, press **0** then **ENTER**.

Read From Memory



NOTES:

[illegible]

NOTES:

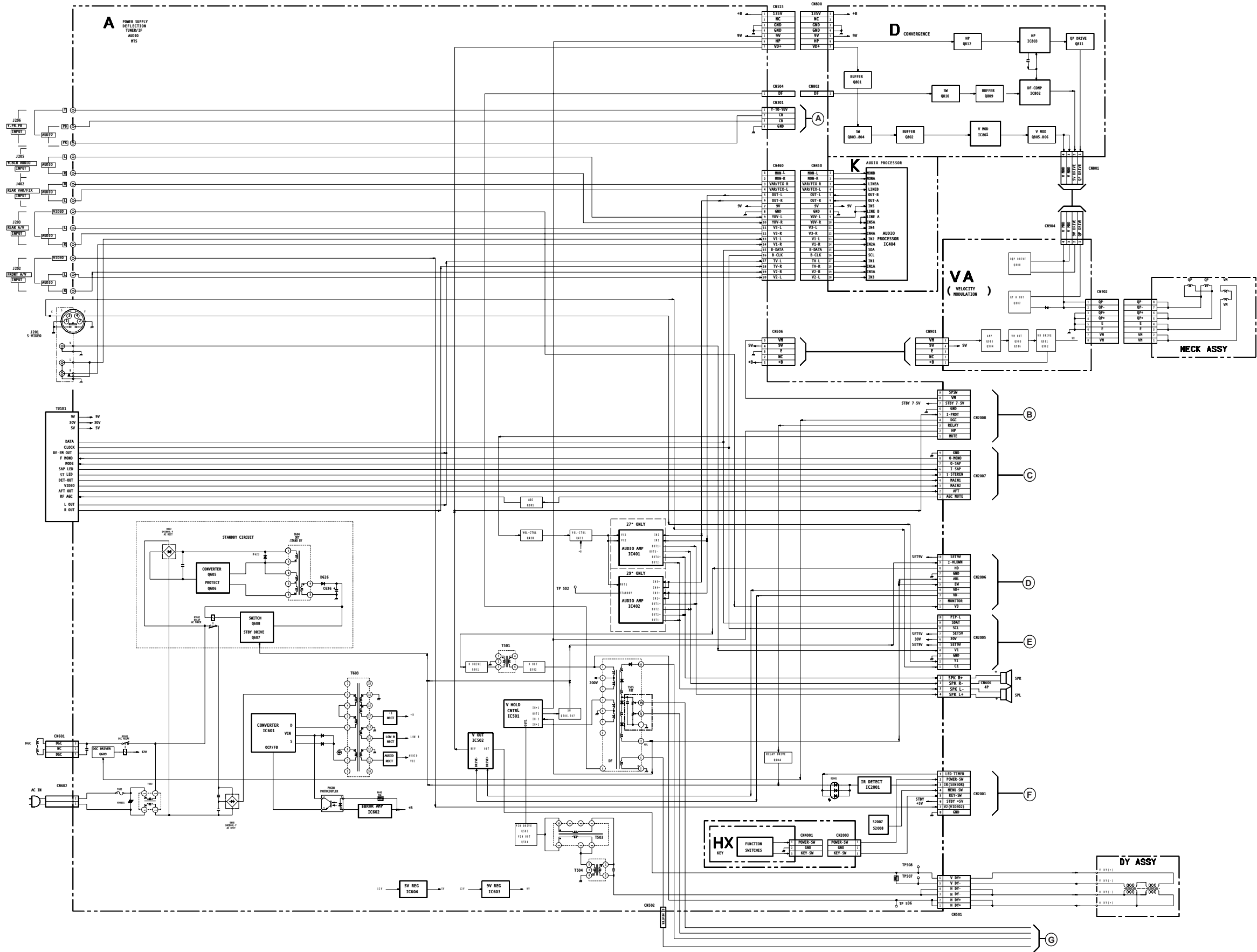
[illegible]

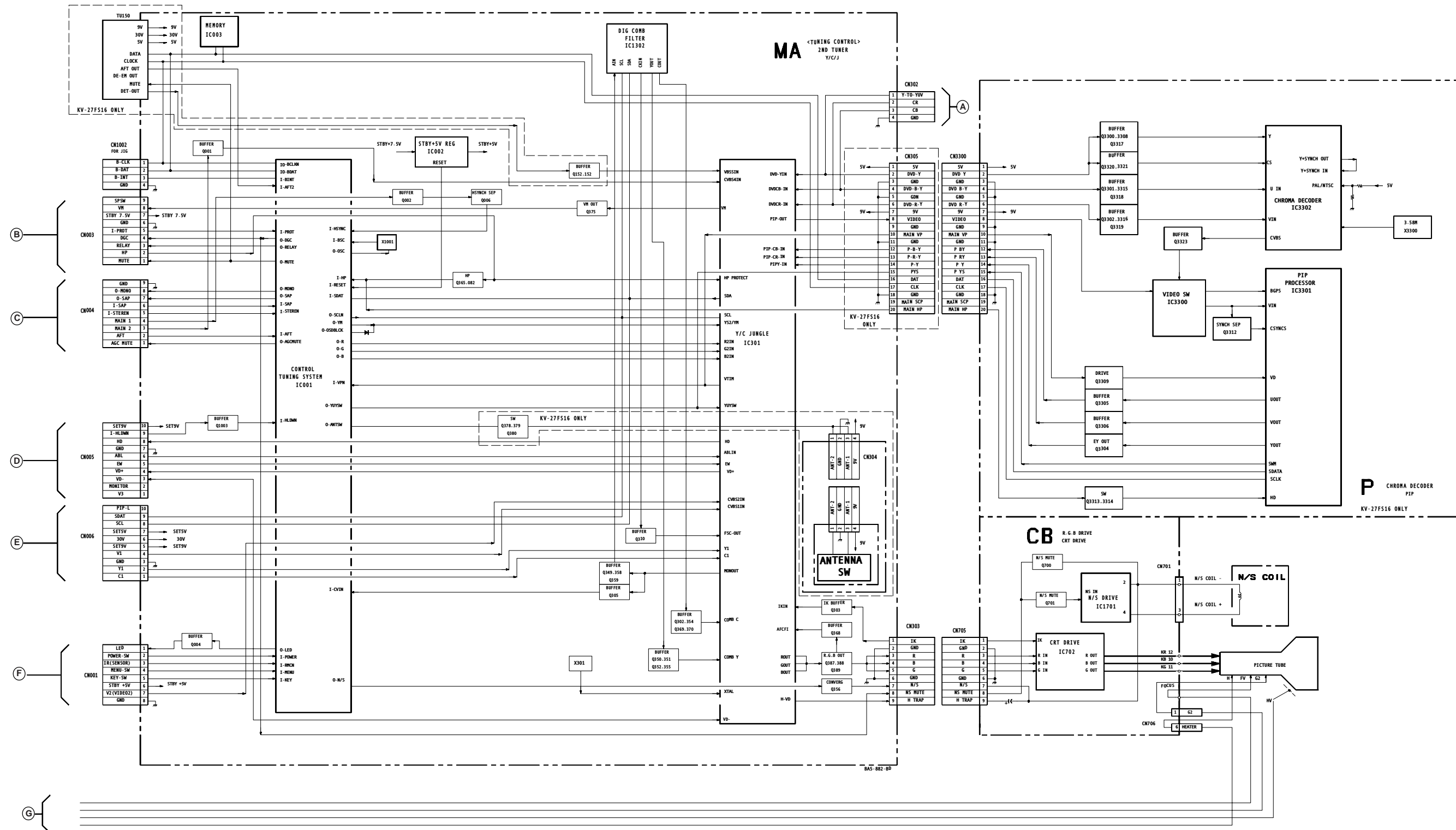
NOTES:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

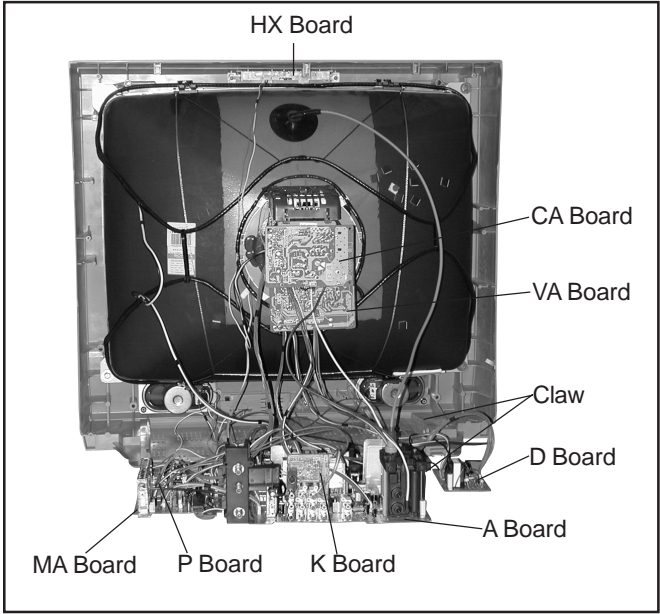
SECTION 6
DIAGRAMS

6.1 BLOCK DIAGRAM





6.2 CIRCUIT BOARD LOCATIONS



6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- All capacitors are in μF unless otherwise noted.
pF: $\mu\mu\text{F}$ 50 WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows:
Pitch: 5mm
Rating electrical power 1/4W (CHIP: 1/10W)
- All resistors are in ohms.
 $\text{K}\Omega = 1000\Omega$ $\text{M}\Omega = 1000\text{K}\Omega$
- : nonflammable resistor
- : fusible resistor
- \triangle : internal component
- : panel designation and adjustment for repair
- \perp : earth-ground
- : earth-chassis
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by and repeat the adjustment until the specified value is achieved (refer to Safety Related Adjustments on page 20).
- When replacing parts shown in the table below, be sure to perform the related adjustments.

Part Replaced ()	Adjustment ()
DY, T505, CRT, IC501, C507, C520, C505, C509, C515, T504, T503, C551, L510, C546, C537, C547, D517, D518, D519, R560, R561, R562, R563, R565, R566, R567, R525.....A Board	HV HOLD-DOWN (R564)
IC301.....MA Board	
IC601, PH601.....A Board	B+ VOLTAGE CONFIRMATION

- All voltages are in Volts
- Voltage is DC with respect to ground unless otherwise noted.
- Readings are taken with a 10M Ω digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references.
- * : cannot be measured
- : B + Line
- : B - Line
- : Signal path

Reference Information

RESISTOR	:	RN	METAL FILM
	:	RC	SOLID
	:	FPRD	NON FLAMMABLE CARBON
	:	FUSE	NON FLAMMABLE FUSIBLE
	:	RW	NON FLAMMABLE WIREWOUND
	:	RS	NON FLAMMABLE METAL OXIDE
	:	RB	NON FLAMMABLE CEMENT
	:		ADJUSTMENT RESISTOR
COIL	:	LF-8L	MICRO INDUCTOR
CAPACITOR	:	TA	TANTALUM
	:	PS	STYROL
	:	PP	POLYPROPYLENE
	:	PT	MYLAR
	:	MPS	METALIZED POLYESTER
	:	MPP	METALIZED POLYPROPYLENE
	:	ALB	BIPOLAR
	:	ALT	HIGH TEMPERATURE
	:	ALR	HIGH RIPPLE

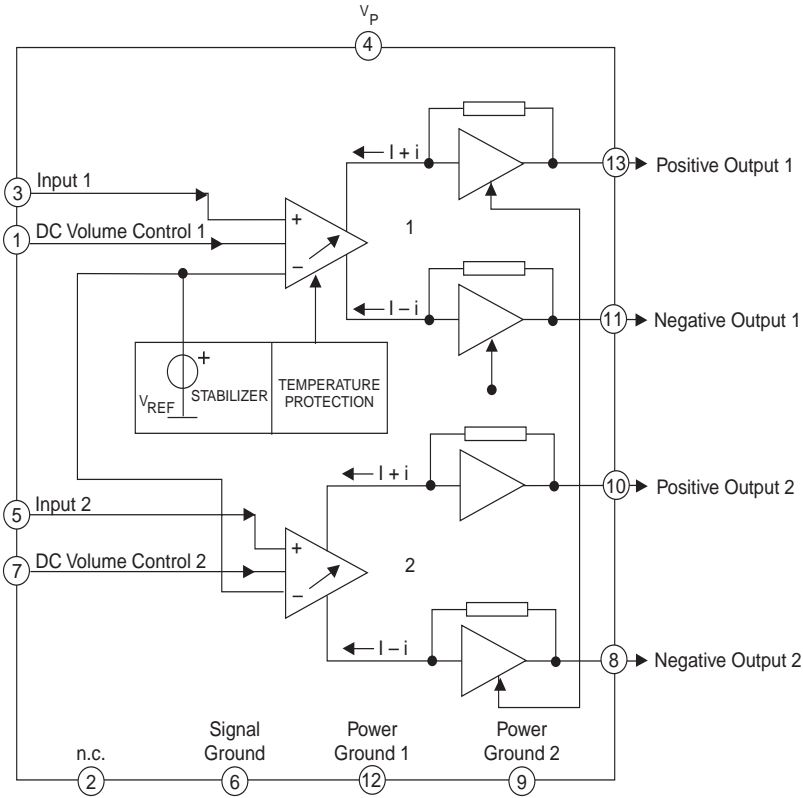
Note:

The components identified by shading and \triangle mark are critical for safety. Replace only with the part number specified.
The symbol (displayed on component side of the circuit board) indicates fast operating fuse. Replace only with fuse of the same rating as marked.

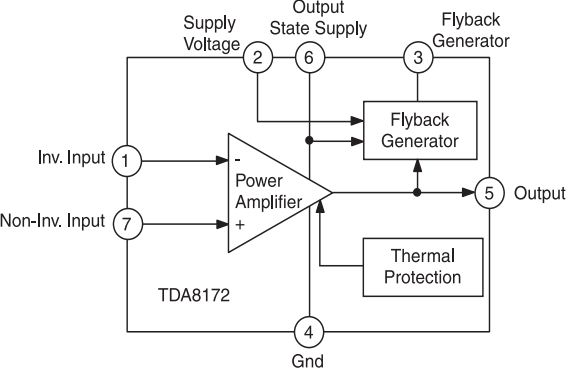
Les composants identifiés per un tramé et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. Le symbole indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme marque.

A BOARD IC BLOCK DIAGRAMS

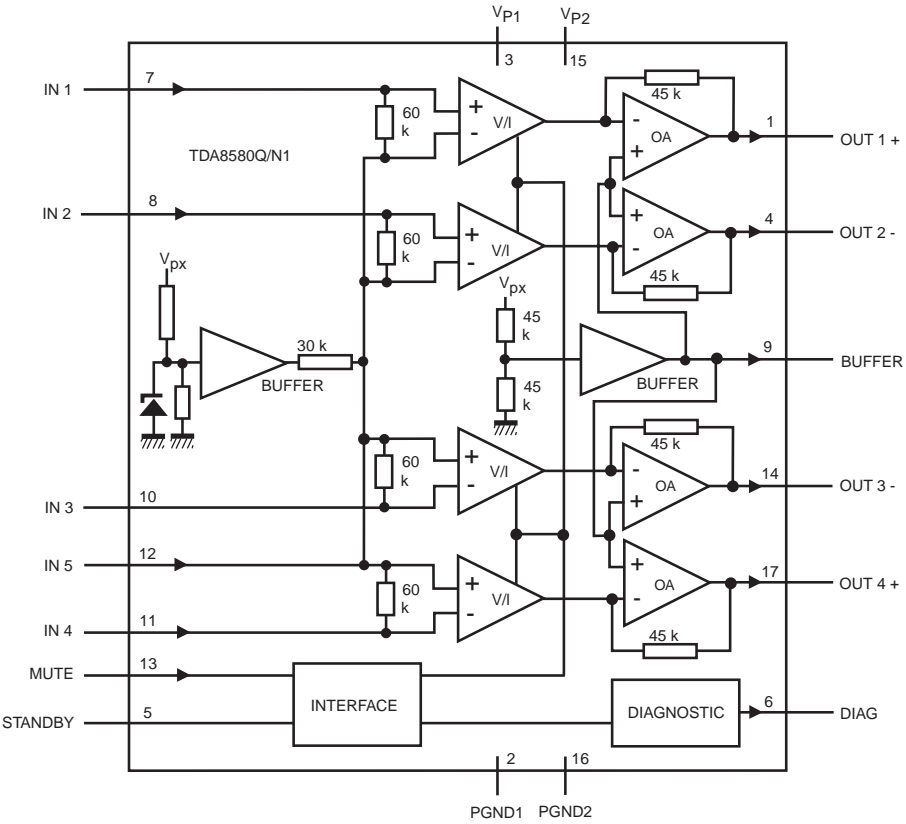
A BOARD: IC401 TDA7057AQ/N2 (KV-27FS12/27FS16 ONLY)



A BOARD: IC502 TDA8172

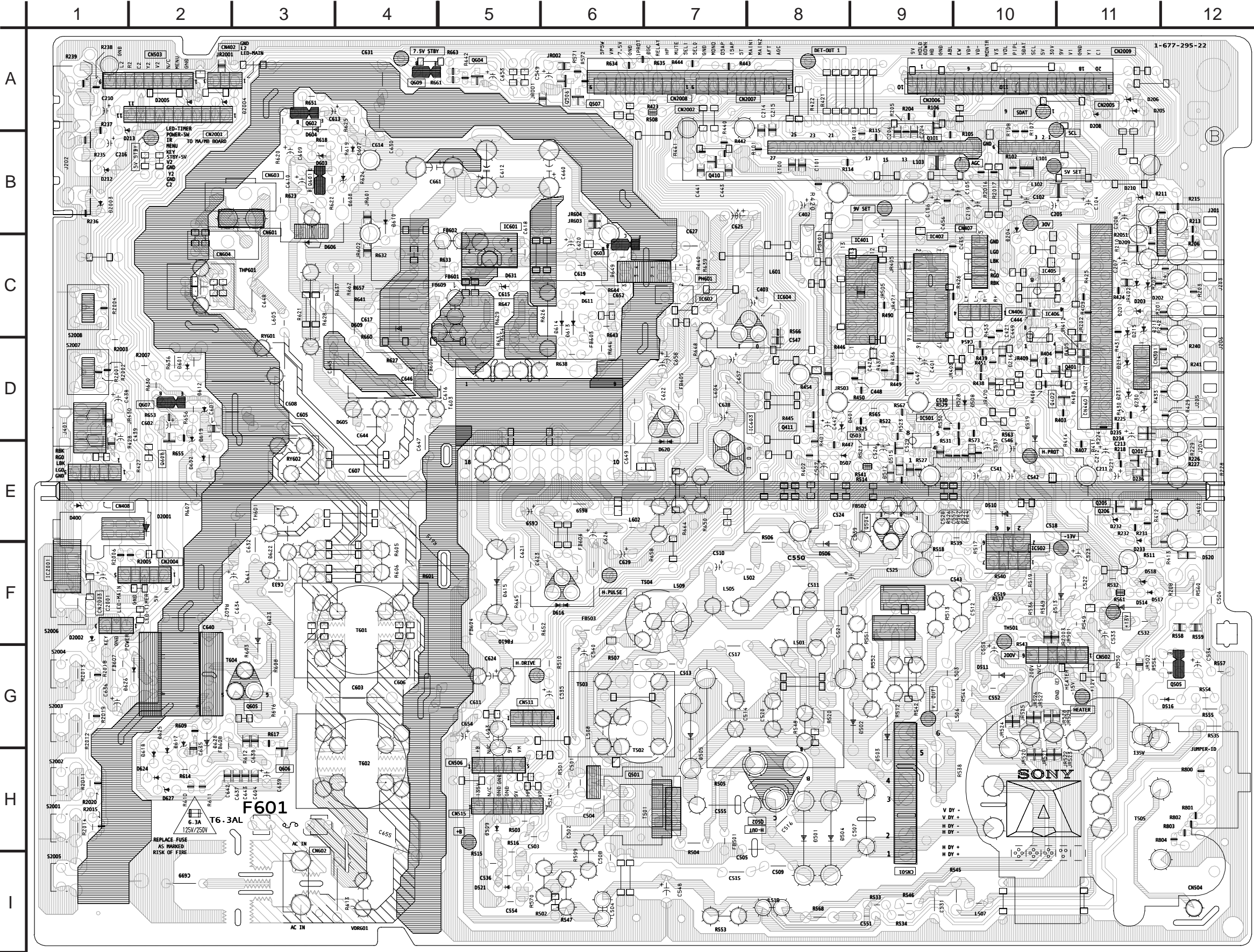


A BOARD: IC402 TDA8580Q/N1 (KV-29FS12/29FS12C ONLY)



A

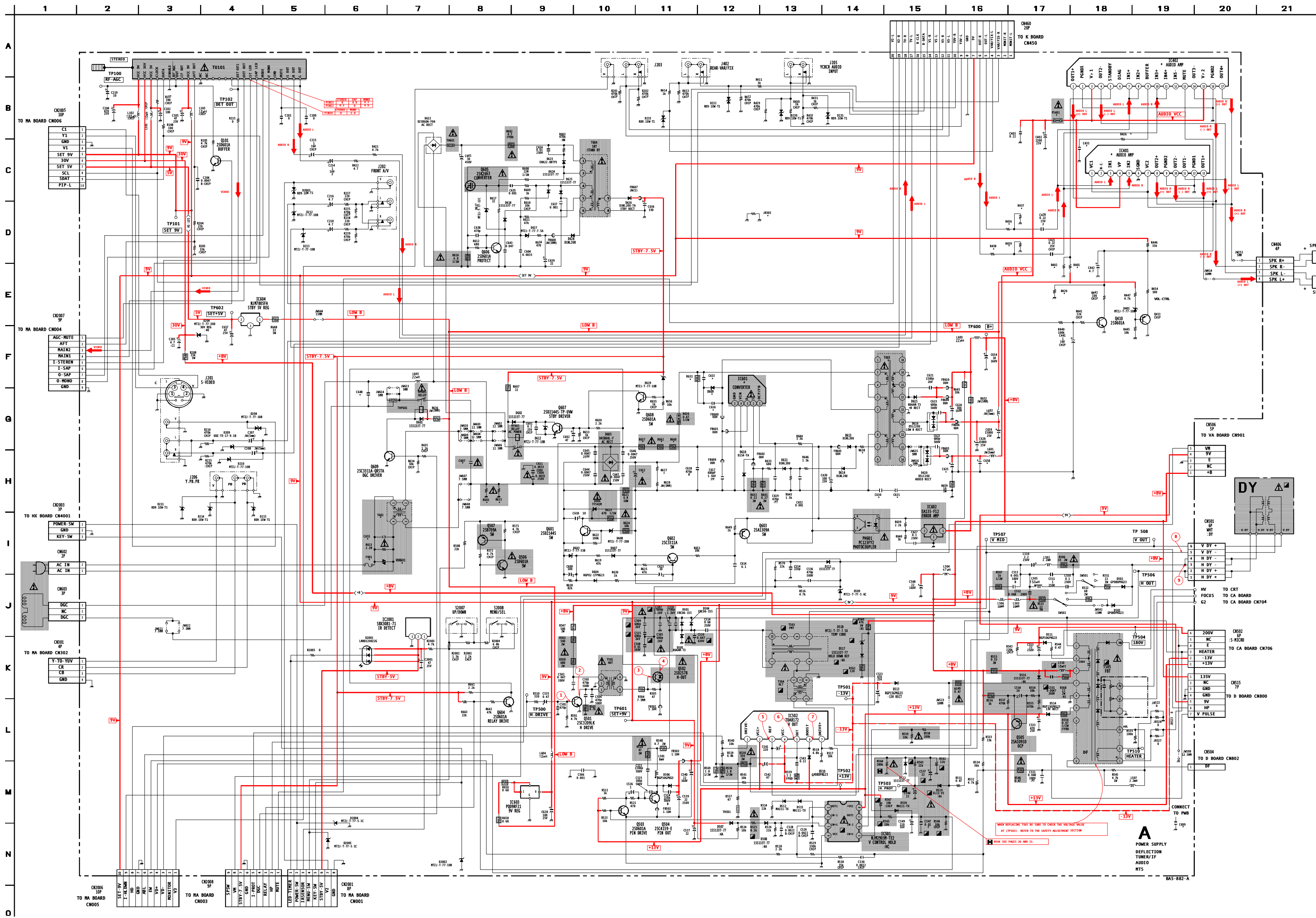
[POWER SUPPLY, DEFLECTION, TUNER/IF, AUDIO, MTS]



A BOARD LOCATOR LIST

DIODE		D604	B3	TRANSISTOR	
D204	B10	D605	D4	Q101	A9
D208	A11	D606	C3	Q410	B7
D209	C11	D607	B4	Q411	D8
D210	B11	D608	B3	Q501	H7
D211	C11	D609	C4	Q502	H7
D212	B1	D610	B4	Q503	D9
D213	B1	D611	C6	Q504	E9
D214	D11	D612	D2	Q505	G12
D215	C11	D613	C6	Q506	A6
D230	D11	D614	C6	Q507	A6
D231	D11	D615	F5	Q601	B3
D232	E11	D616	F6	Q602	A3
D233	E11	D617	H2	Q603	C6
D401	D8	D618	H2	Q604	A5
D501	H8	D619	D2	Q605	G3
D502	G9	D620	D7	Q606	H3
D503	G9	D622	F3	Q607	D2
D504	H8	D623	G2	Q608	D2
D505	G7	D624	G5	Q609	A4
D506	F8	D625	H2		
D507	E8	D626	G1		
D508	D9	D627	H2		
D509	H5	D628	H2		
D510	E10	D2001	E2		
D511	G10	D2002	F1		
D512	E9	D2003	B1		
D513	F10	D2004	A2		
D514	F11	D2005	A2		
D515	E9	IC			
D516	G11	IC401	C9		
D517	F11	IC402	B9		
D518	F11	IC501	D9		
D519	D10	IC502	F10		
D520	F12	IC601	B5		
D521	I5	IC602	C7		
D522	E9	IC603	D7		
D601	D2	IC604	C8		
D602	E2	IC2001	E1		
D603	B3				

A BOARD SCHEMATIC DIAGRAM



A BOARD MARK (*) LIST

REF NO.	LOC.	KV-27FS12 KV-27FS16	KV-29FS12 KV-29FS12C
C435	B18	#	.22UF 25V
C607	H18	.47UF 125V	.47UF 300V
C612	H11	680UF 250V	560UF 400V
C615	F12	#	.022UF 400V
C616	G12	#	220PF 1KV
C625	H16	1000UF 25V	15000UF 25V
C630	H15	4700 PF 250V	#
C631	H15	4700PF 250V	#
C648	G6	.22UF 125V	.22UF 300V
C655	I7	.47UF 125V	.47UF 300V
C658	H16	1000UF 25V	15000UF 25V
C699	L19	.0047UF 250V	#
D609	G12	#	RU-1P
F601	I6	6.3A/125V	6.3A/250V
IC401	C19	TDA7057 AQ/N2	#
IC402	A19	#	TDA8580Q/N1
IC601	F12	STR-F6626	STR-F6656
JR505	D13	0	#
JV607	H8	#	JV(7.5MM)
JV608	H8	#	JV(7.5MM)
JV609	G8	#	JV(7.5MM)
JV610	G8	#	JV(7.5MM)
PS401	B17	1-576-336-21	1-532-686-21
R401	D18	#	20K
R402	D18	#	10K
R420	E17	3.9K	#
R426	B19	#	22
R436	D14	10K	22K
R437	D15	10K	4.7K
R438	D14	10K	22K
R439	D14	10K	4.7K
R601	H9	4.7M 1/2W	#
R615	H9	#	8.2M
R627	H11	390K	270K
R631	F12	#	100K
R637	G11	JV(20MM)	5.6K
R638	G14	33	56
R660	G11	15K	5.6K
R662	G11	JV(20MM)	5.6K
T602	I6	1-435-617-11	1-426-717-11
T603	F15	1-433-806-11	1-433-807-11
VDR601	I7	1-803-585-11	1-803-967-11

Not Mounted

A BOARD TRANSISTOR VOLTAGE LIST

Q101		Q502		Q506		Q603		Q608	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	0.0	B	-0.1	B	0.0	B	-23.6	B	0.0
C	5.6	C	133.0	C	0.0	C	-31.2	C	0.7
E	GND	E	GND	E	GND	E	-23.6	E	GND
Q410		Q503		Q507		Q604		Q609	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	0.0	B	0.2	B	0.0	B	0.1	B	0.0
C	5.2	C	3.8	C	0.0	C	4.1	C	13.9
E	GND	E	0.0	E	0.0	E	GND	E	GND
Q411		Q504		Q601		Q606		All voltages are in V	
pin	volt	pin	volt	pin	volt	pin	volt		
B	5.3	B	0.1	B	-33.0	B	-36.1		
C	GND	C	-6.5	C	-33.0	C	-35.3		
E	5.2	E	0.0	E	-33.1	E	-36.3		
Q501		Q505		Q602		Q607			
pin	volt	pin	volt	pin	volt	pin	volt		
B	0.0	B	134.9	B	-32.8	B	0.7		
C	93.3	C	1.8	C	-23.6	C	0.1		
E	GND	E	135.5	E	-32.9	E	GND		

All voltages are in V

A BOARD TRANSISTOR VOLTAGE LIST

Q605	
pin	volt
D	-35.6
G	40.8
S	36.8

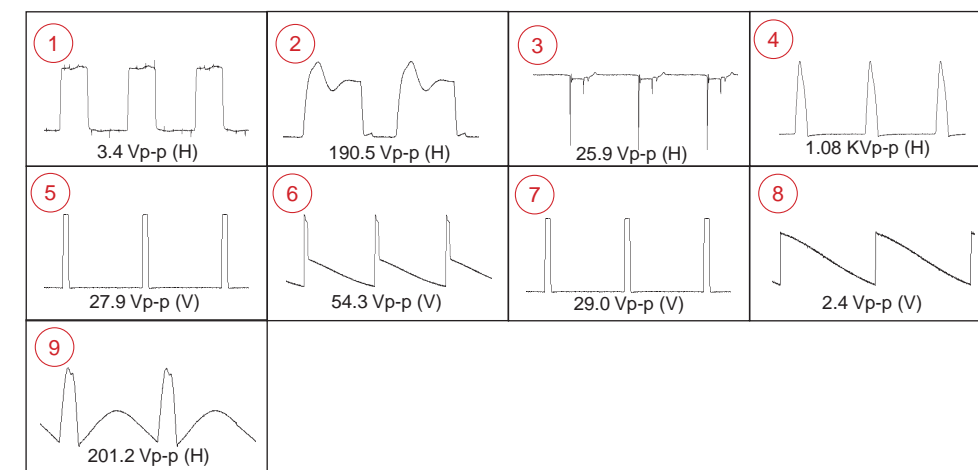
All voltages are in V

A BOARD IC VOLTAGE LIST

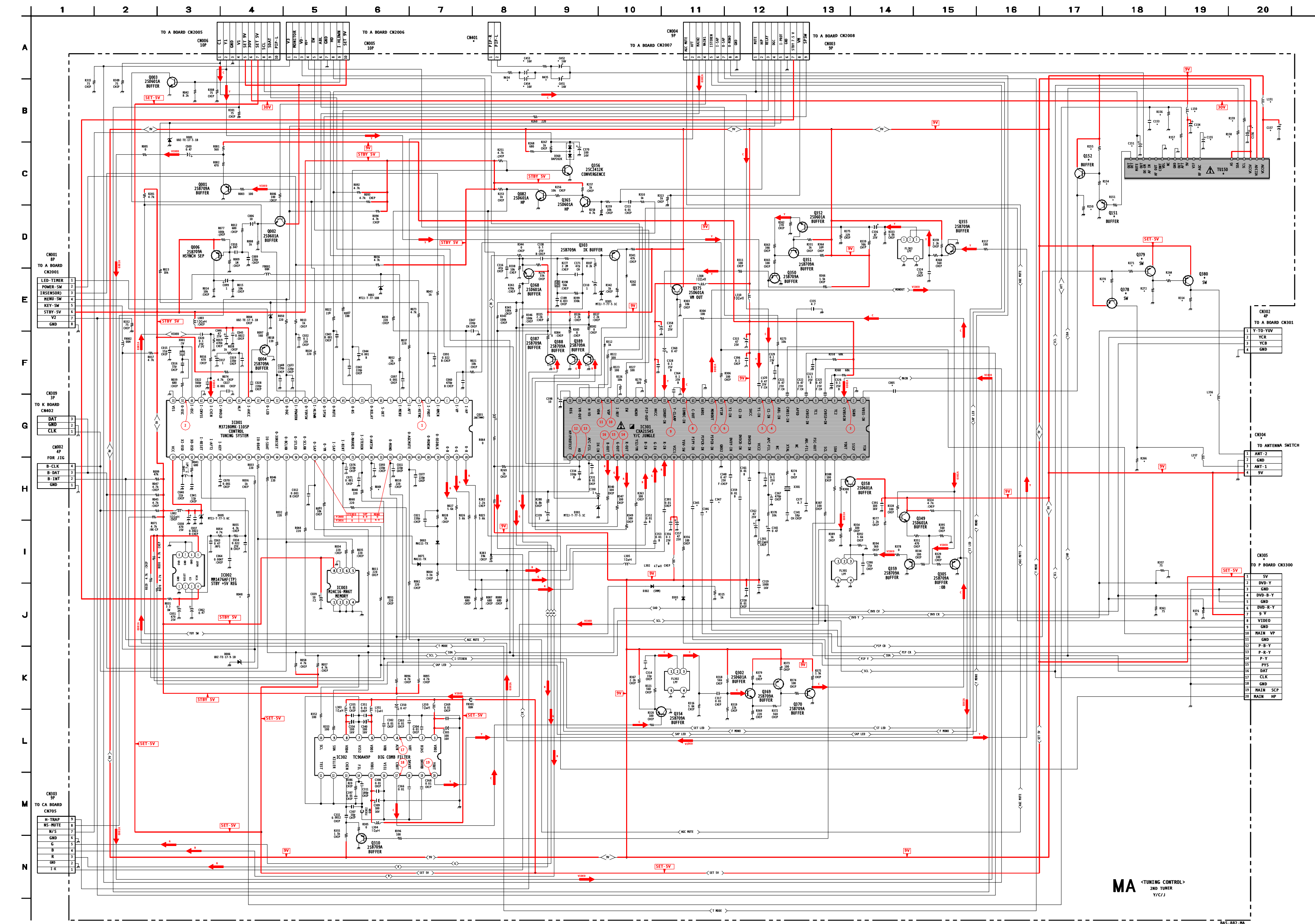
IC401		13	6.9	12	4.1	7	0.1	2	-32.7	4	13.3	2	30.7	16	N/C
pin	volt	IC402		13	5.2	8	14.0	3	53.2	IC604		3	5.1	17	4.7
1	0.6	pin	volt	14	6.8	IC502		4	-23.8	pin	volt	4	4.9	18	4.4
2	0.0	1	6.8	15	14.1	pin	volt	5	-32.7	1	13.3	5	4.9	19	5.0
3	2.4	2	GND	16	GND	1	2.1	IC602		2	5.0	6	GND	20	5.0
4	14.3	3	14.1	17	6.8	2	14.0	pin	volt	3	GND	7	5.5	21	0.3
5	2.4	4	6.8	IC501		3	-12.6	1	135.9	IC2001		8	2.1	22	0.0
6	0.0	5	4.3	pin	volt	4	-13.9	2	123.4	pin	volt	9	8.9	23	0.0
7	0.6	6	NC	1	0.2	5	0.2	3	GND	1	5.0	10	4.1	24	0.0
8	6.9	7	4.1	2	3.7	6	14.3	IC603		2	5.0	11	0.0	25	0.0
9	0.0	8	4.1	3	2.5	7	2.1	pin	volt	3	GND	12	N/C	26	4.5
10	6.9	9	6.8	4	GND	IC601		1	13.3	TU101		13	N/C	27	4.5
11	6.9	10	4.1	5	9.5	pin	volt	2	8.9	pin	volt	14	N/C	All voltages are in V	
12	0.0	11	4.1	6	10.1	1	-31.8	3	GND	1	8.6	15	N/C		

All voltages are in V

A BOARD WAVEFORMS

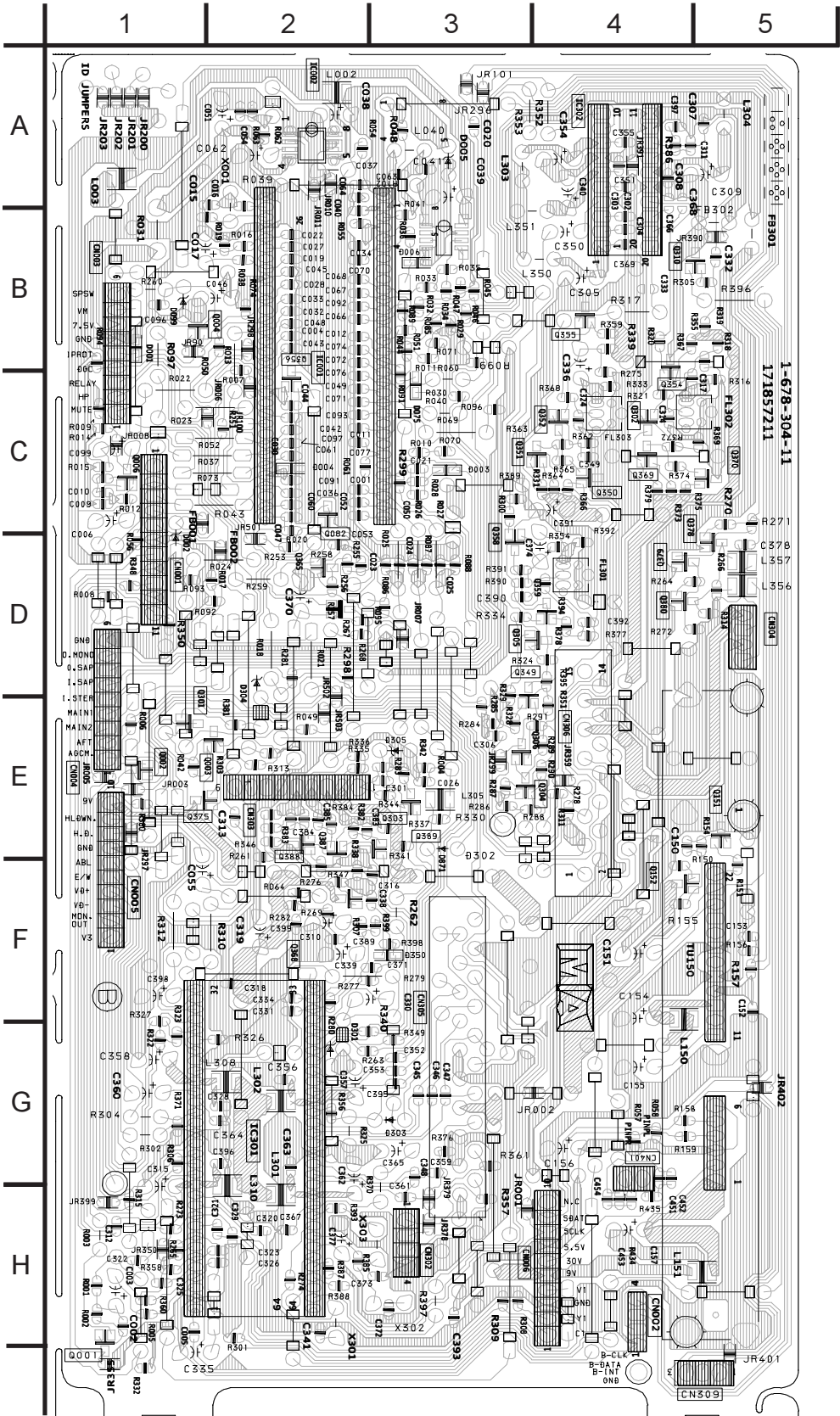


MA BOARD SCHEMATIC DIAGRAM



MA

[TUNING CONTROL, 2ND TUNER, Y/C/J]



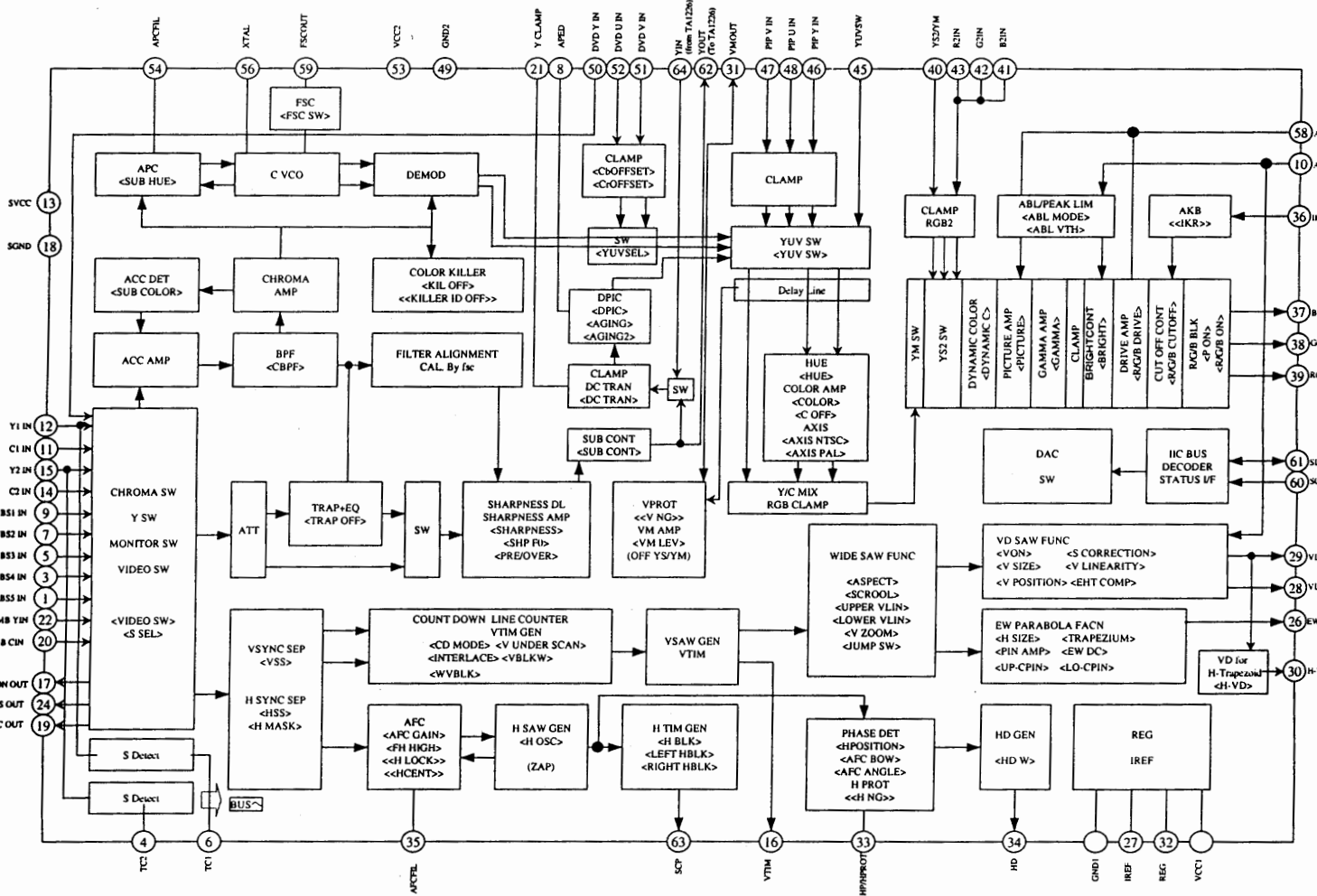
MA BOARD IC VOLTAGE LIST

IC001		18	0.1	37	3.1	56	1.0	IC003		8	3.4	27	2.4	46	4.3	IC302		18	3.2	15	GND
pin	volt	19	4.3	38	5.0	57	NC	pin	volt	9	4.8	28	3.5	47	5.2	pin	volt	19	1.9	16	NC
1	0.5	20	0.1	39	NC	58	0.1	1	GND	10	1.7	29	3.5	48	5.2	1	5.0	20	2.4	17	GND
2	4.8	21	NC	40	NC	59	NC	2	GND	11	0.0	30	5.9	49	GND	2	1.4	TU101		18	NC
3	NC	22	5.0	41	NC	60	NC	3	GND	12	4.8	31	5.5	50	4.8	3	3.2	pin	volt	19	NC
4	5.0	23	NC	42	4.8	61	0.1	4	GND	13	8.9	32	7.6	51	5.2	4	2.4	1	9.0	20	2.0
5	0.0	24	5.0	43	4.8	62	0.1	5	4.8	14	NC	33	3.6	52	5.2	5	1.9	2	3.0	21	0.3
6	0.0	25	2.1	44	NC	63	0.1	6	4.8	15	NC	34	2.3	53	9.0	6	5.0	3	5.0	22	4.0
7	2.4	26	NC	45	4.8	64	0.1	7	GND	16	4.8	35	2.3	54	5.3	7	0.0	4	4.8	All voltages are in V	
8	4.4	27	0.3	46	NC	IC002		8	5.0	17	4.4	36	3.9	55	1.6	8	5.0	5	4.8		
9	NC	28	2.2	47	4.8	pin	volt	IC301		18	GND	37	1.9	56	1.7	9	4.8	6	5.1		
10	NC	29	GND	48	0.1	1	GND	pin	volt	19	NC	38	1.9	57	1.1	10	4.8	7	NC		
11	0.1	30	2.2	49	0.1	2	5.0	1	5.9	20	6.4	39	2.0	58	7.2	11	0.0	8	NC		
12	NC	31	2.3	50	5.0	3	4.9	2	GND	21	3.9	40	0.0	59	4.8	12	0.0	9	NC		
13	0.5	32	GND	51	5.0	4	7.2	3	5.2	22	5.6	41	4.6	60	4.8	13	2.6	10	NC		
14	NC	33	5.0	52	NC	5	5.0	4	5.0	23	8.9	42	4.6	61	4.8	14	2.1	11	7.5		
15	0.1	34	2.5	53	1.0	6	GND	5	4.8	24	5.7	43	4.6	62	NC	15	5.0	12	NC		
16	0.1	35	2.5	54	0.1	7	GND	6	5.0	25	GND	44	8.9	63	NC	16	0.0	13	9.0		
17	0.0	36	5.0	55	NC	8	NC	7	4.8	26	3.5	45	0.2	64	NC	17	2.5	14	5.3		

All voltages are in V

MA BOARD IC BLOCK DIAGRAMS

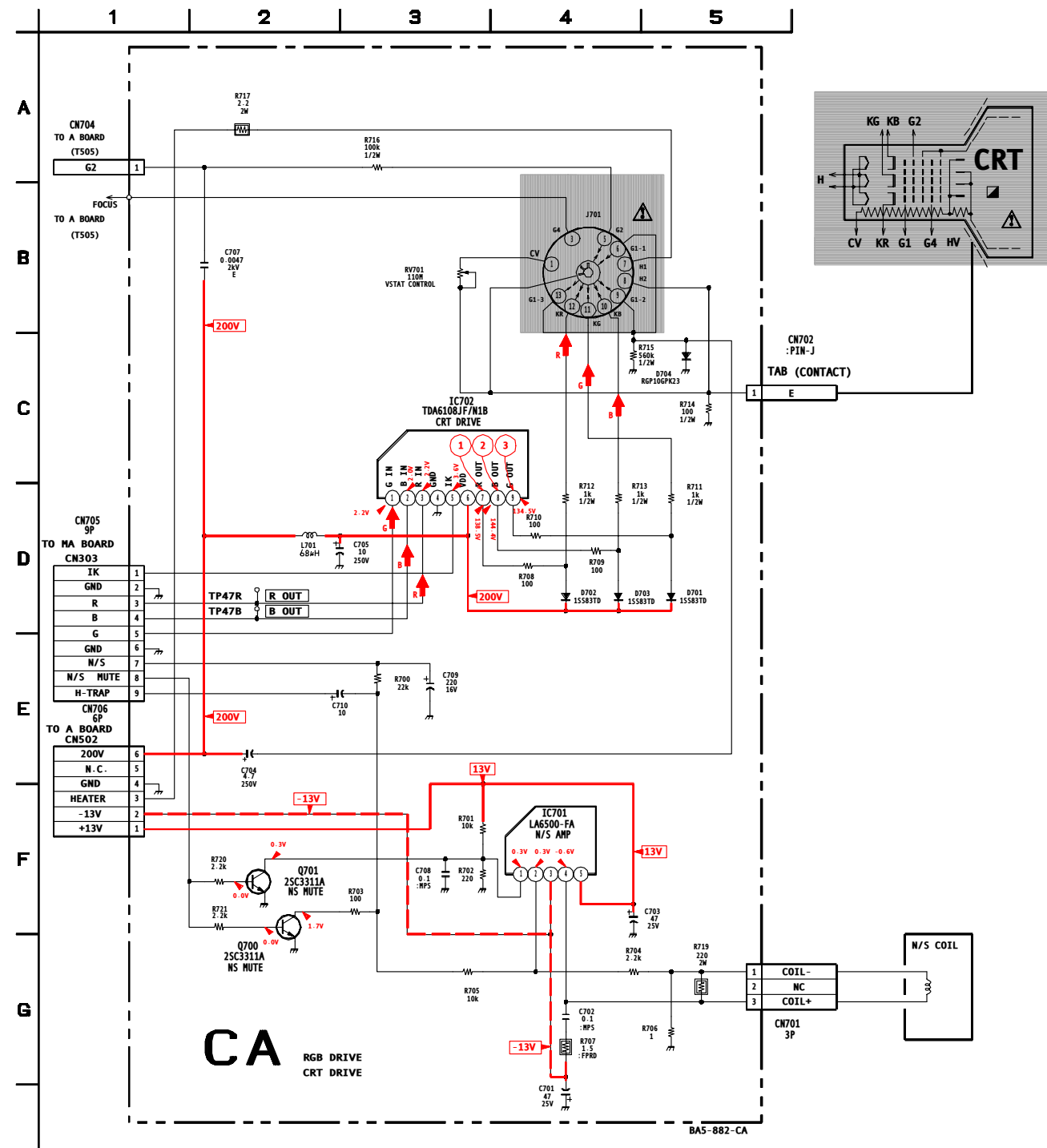
MA BOARD: IC301 CXA2154S



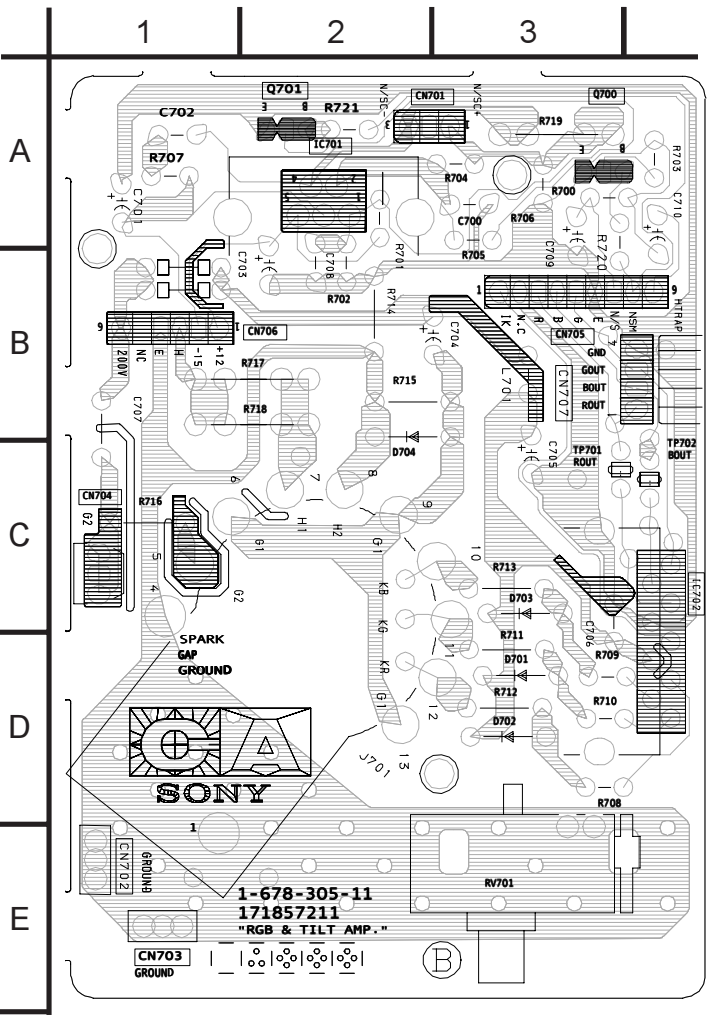
MA BOARD LOCATOR LIST

DIODE		D005	A-3	D305	E-2	IC003	B-3	Q002	E-1	Q151	E5	Q310	B-4	Q354	C-4	Q365	D-2	Q378	C4	Q389	E-3
D001	B-1	D006	B-3	D360	D-2	IC301	G-2	Q003	E-1	Q152	F4	Q349	D-3	Q355	B-4	Q368	F-2	Q379	D4	CRYSTAL	
D002	C-1	D075	C-3	IC		IC302	A-4	Q004	B-1	Q302	C-4	Q350	C-4	Q356	C-2	Q369	C-4	Q380	D4	X001	A-2
D003	C-3	D301	F-2	IC001	B-2	TRANSISTOR		Q006	C-1	Q303	E-2	Q351	C-3	Q358	D-3	Q370	C-4	Q387	E-2	X301	H-2
D004	C-2	D303	G3	IC002	A-2	Q001	H-1	Q082	C-2	Q305	D-3	Q352	C-3	Q359	D-3	Q375	E-2	Q388	E-2		

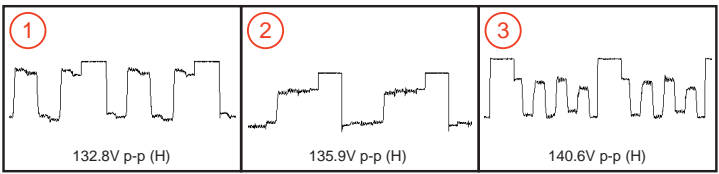
CA BOARD SCHEMATIC DIAGRAM



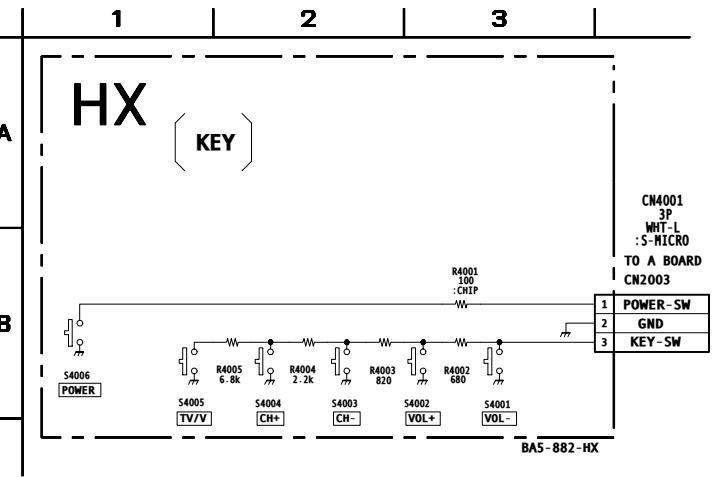
CA [RGB DRIVE, CRT DRIVE]



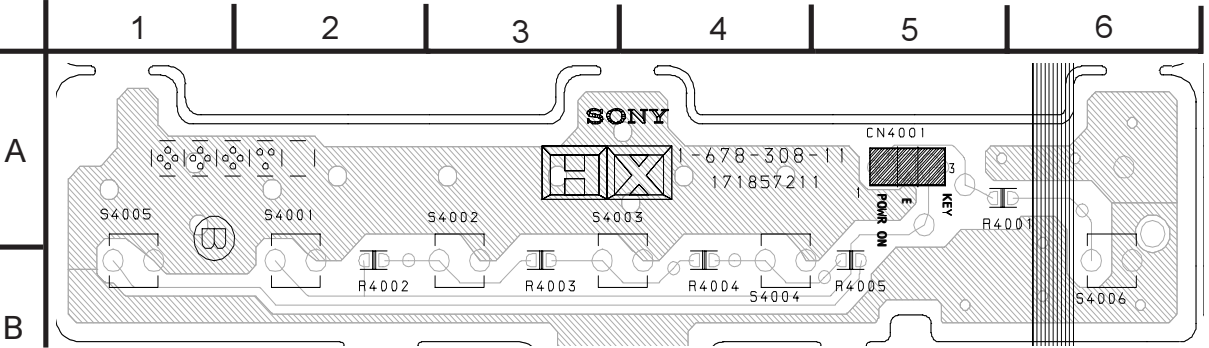
CABOARD WAVEFORMS



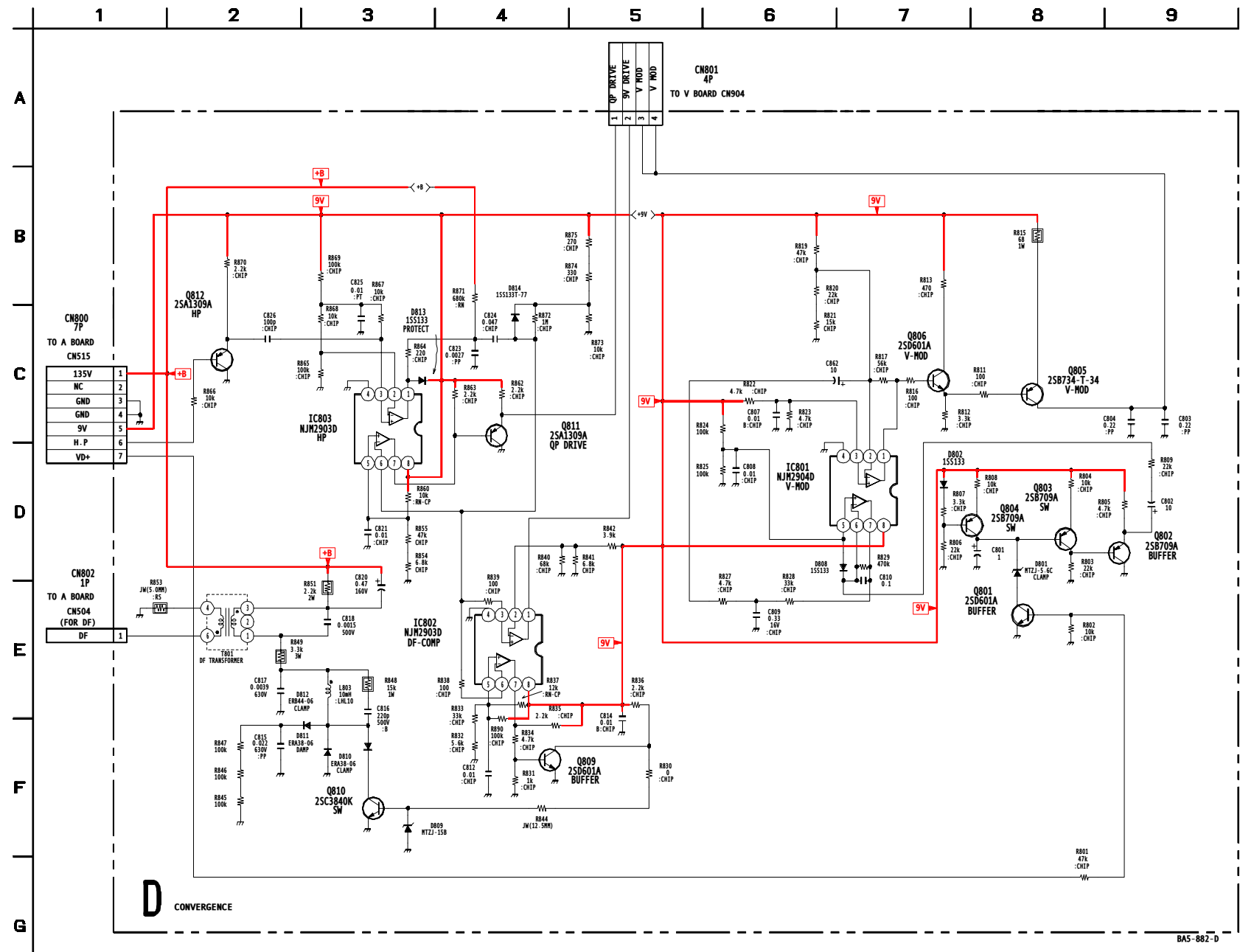
MAX BOARD SCHEMATIC DIAGRAM



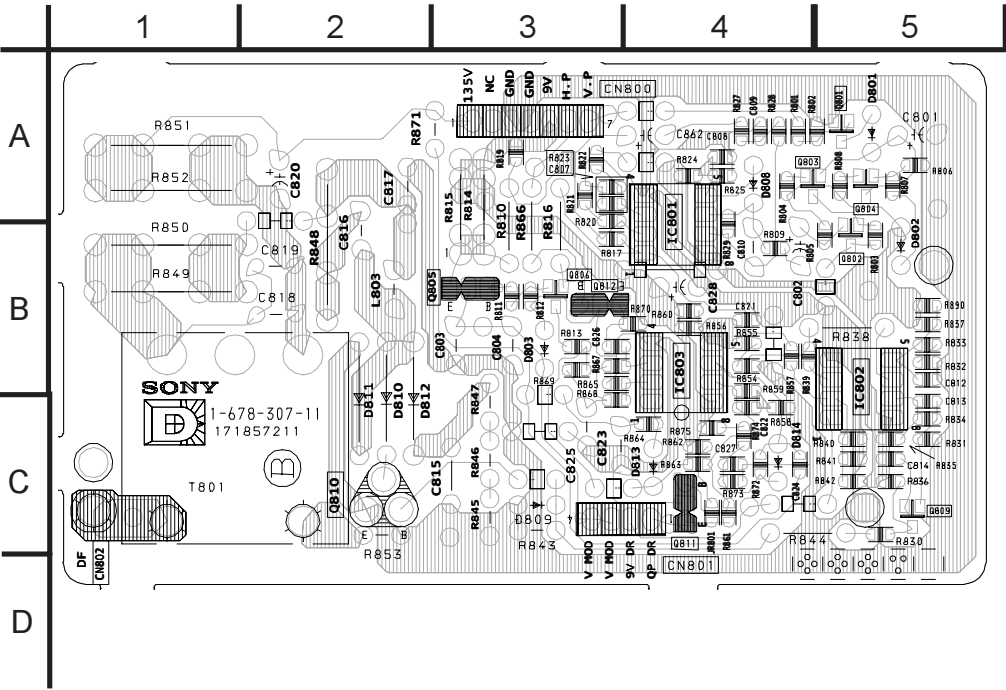
HX [KEY]



D BOARD SCHEMATIC DIAGRAM



D [CONVERGENCE]



D BOARD TRANSISTOR VOLTAGE LIST

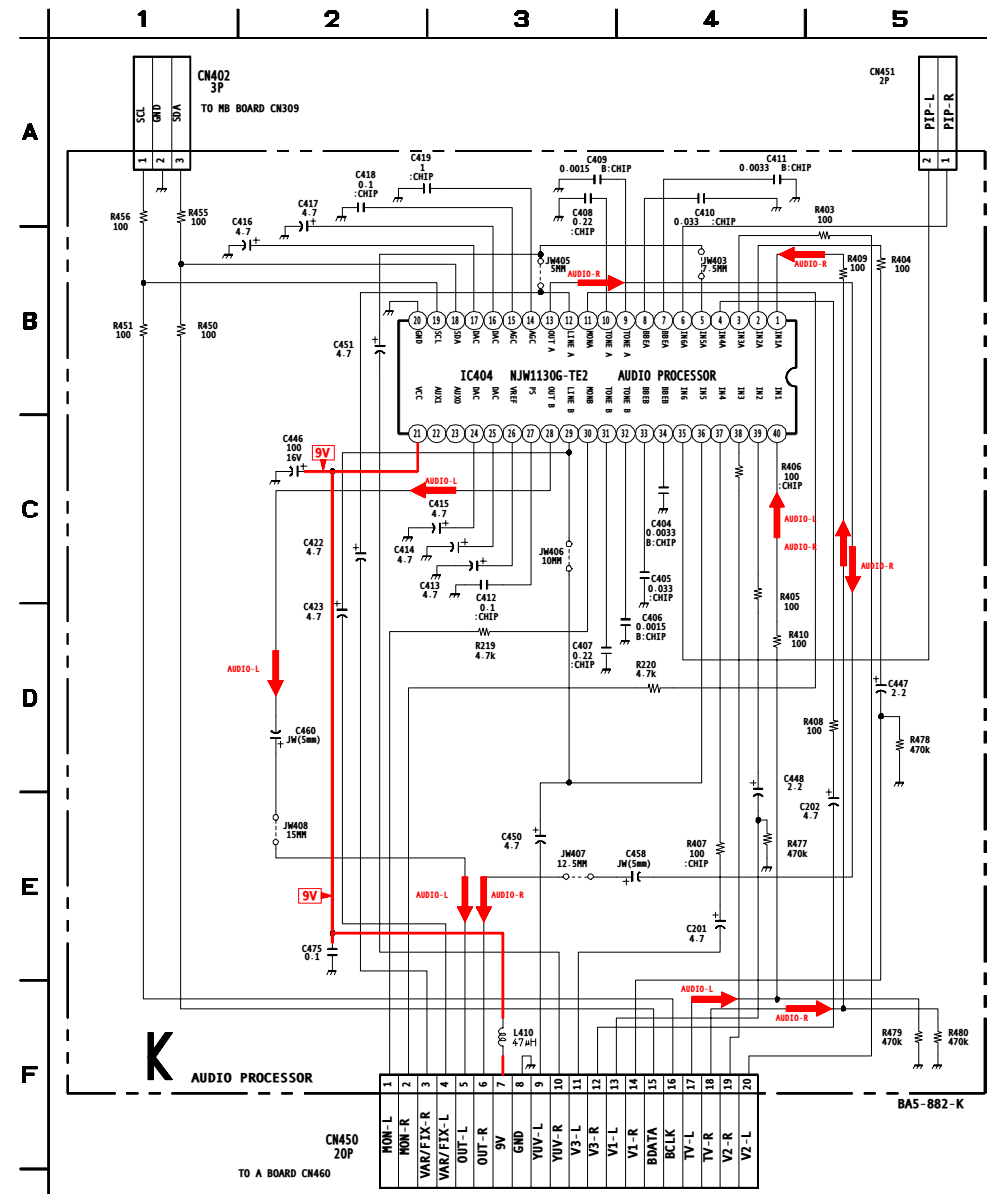
Q801		Q806	
pin	volt	pin	volt
B	-2.2	B	7.3
C	3.4	C	8.1
E	GND	E	6.7
Q802		Q809	
pin	volt	pin	volt
B	4.3	B	0.3
C	GND	C	0.3
E	4.9	E	GND
Q803		Q810	
pin	volt	pin	volt
B	6.4	B	0.3
C	4.3	C	1.2
E	7.0	E	GND
Q804		Q811	
pin	volt	pin	volt
B	7.4	B	6.3
C	6.4	C	GND
E	7.9	E	6.4
Q805		Q812	
pin	volt	pin	volt
B	6.7	B	0.0
C	0.6	C	GND
E	7.3	E	0.6

All voltages are in V

D BOARD IC VOLTAGE LIST

IC801		IC803	
pin	volt	pin	volt
1	7.3	1	2.3
2	4.4	2	4.3
3	4.5	3	4.7
4	GND	4	GND
5	4.5	5	7.6
6	4.5	6	6.7
7	4.5	7	6.0
8	9.0	8	9.0
IC802		All voltages are in V	
pin	volt		
1	6.8		
2	5.7		
3	0.0		
4	GND		
5	6.8		
6	6.7		
7	3.2		
8	9.0		

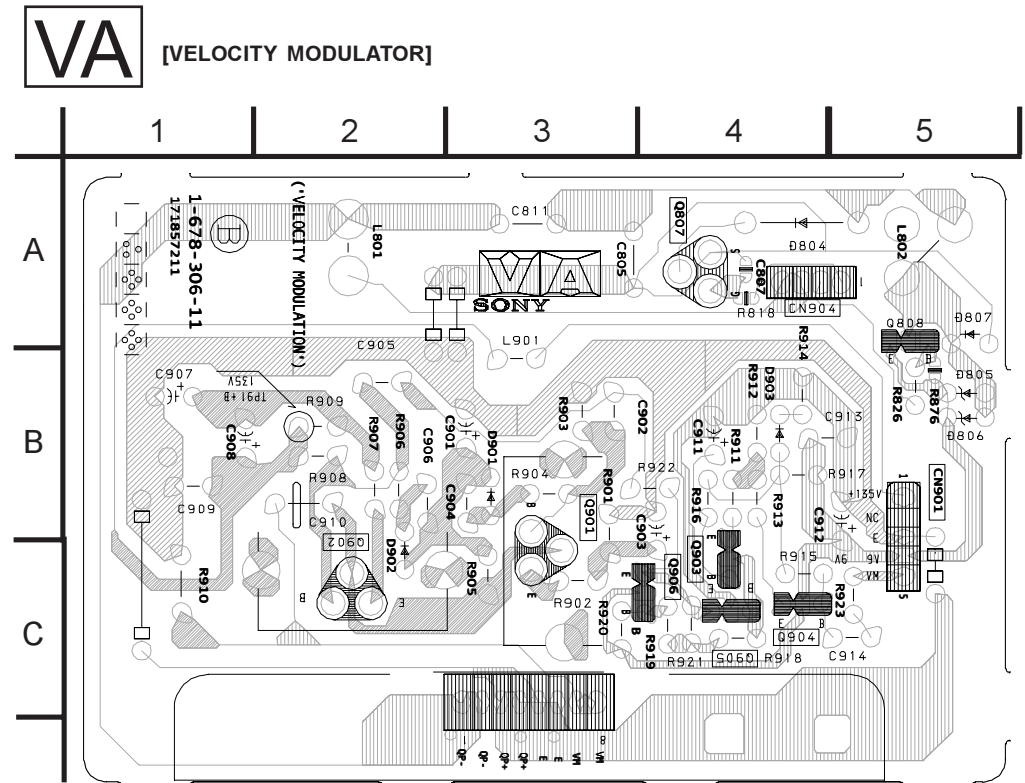
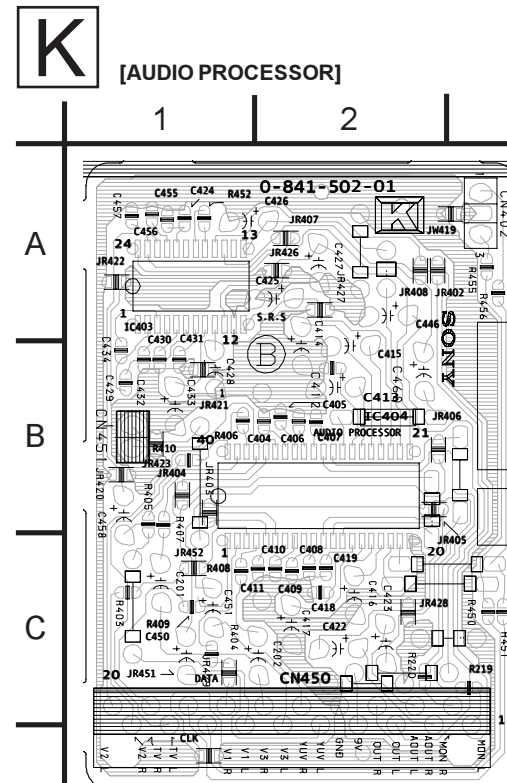
K BOARD SCHEMATIC DIAGRAM



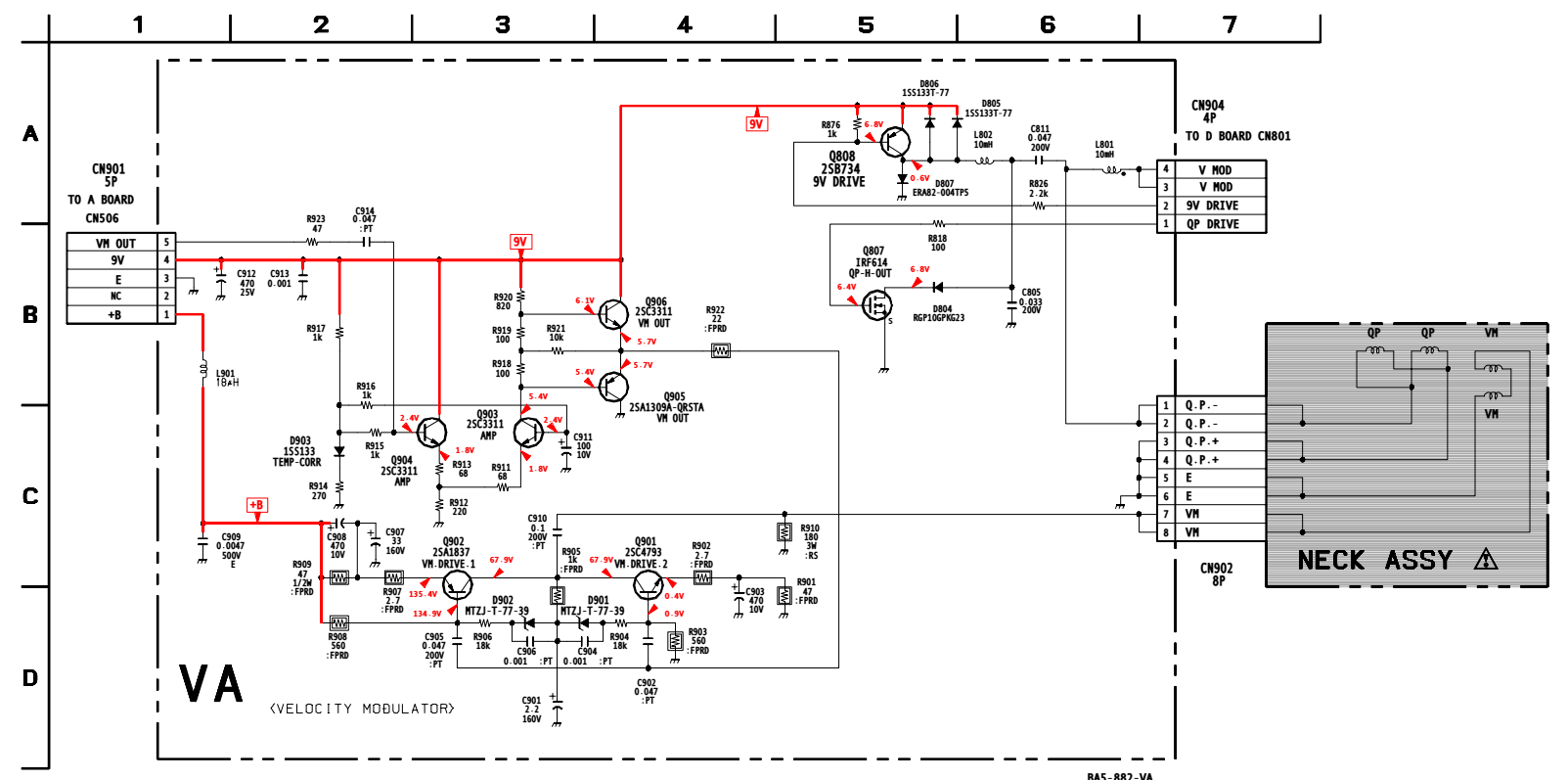
K BOARD IC VOLTAGES

IC404		6	NC	13	4.5	20	GND	27	3.9	34	4.5
pin	volt	7	4.7	14	1.0	21	8.9	28	4.5	35	NC
1	4.5	8	4.5	15	4.5	22	NC	29	4.5	36	4.5
2	4.5	9	4.5	16	0.9	23	NC	30	4.5	37	4.5
3	4.5	10	4.5	17	0.9	24	1.3	31	4.5	38	4.5
4	4.5	11	4.5	18	4.8	25	1.3	32	4.5	39	4.5
5	4.5	12	4.5	19	4.9	26	4.4	33	4.5	40	4.5

All voltages are in V

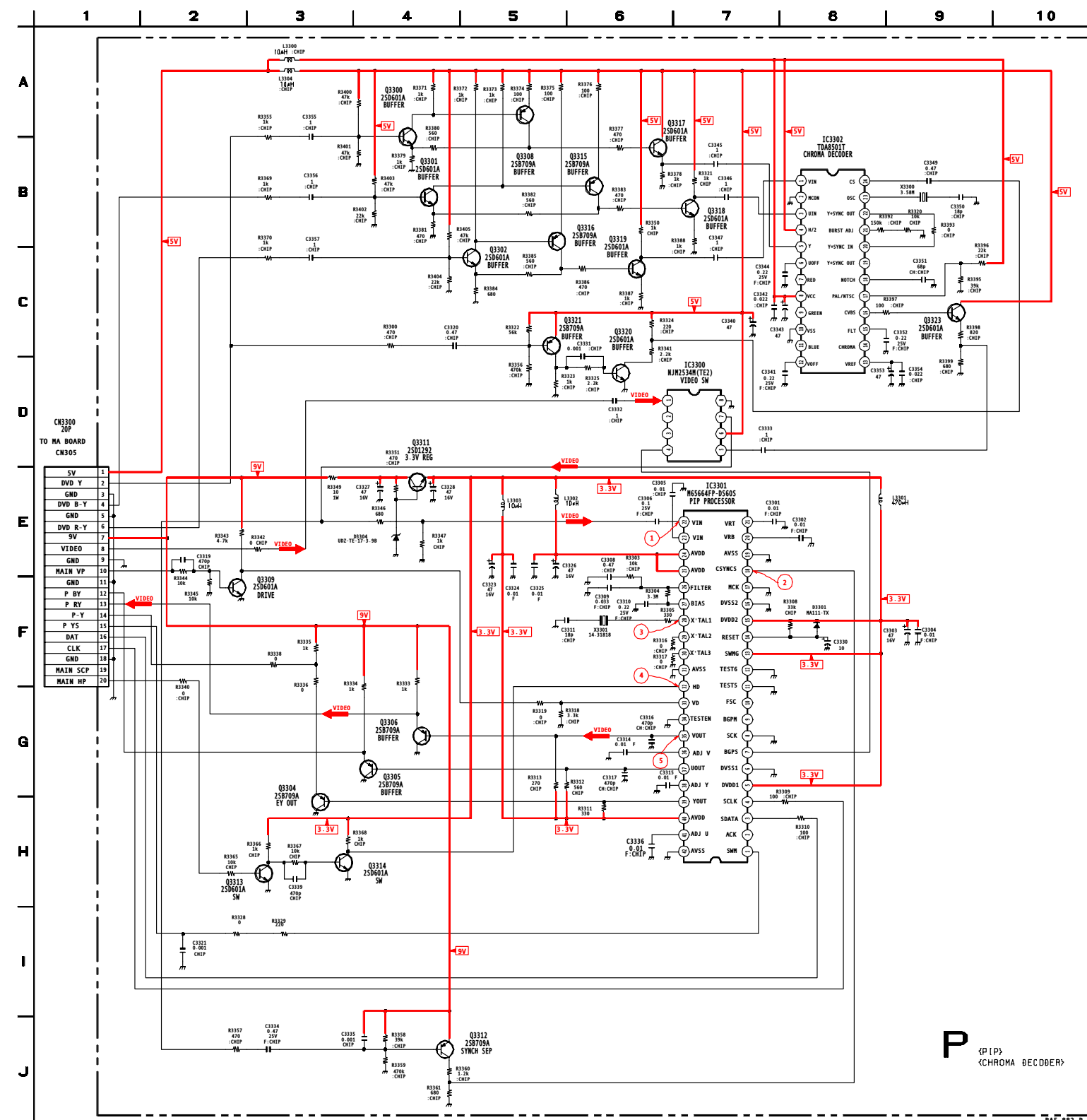


VA BOARD SCHEMATIC DIAGRAM



BA5-882-VA

COMPONENT SIDE

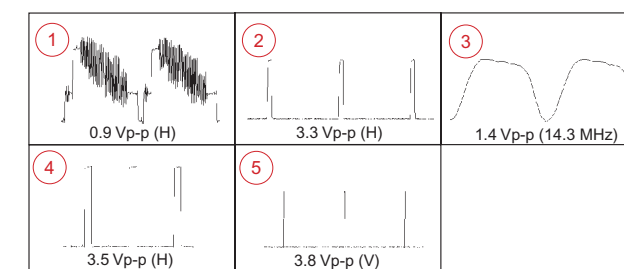


P BOARD TRANSISTOR VOLTAGE LIST

Q3300		Q3305		Q3311		Q3315		Q3319	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	2.4	B	3.0	B	4.1	B	4.2	B	1.9
C	4.2	C	0.0	C	7.7	C	2.4	C	3.8
E	1.8	E	3.7	E	3.5	E	4.8	E	1.3
Q3301		Q3306		Q3312		Q3316		Q3320	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	1.6	B	3.1	B	8.8	B	0.0	B	0.0
C	4.2	C	0.0	C	0.7	C	1.9	C	5.0
E	1.0	E	3.8	E	9.0	E	4.9	E	0.0
Q3302		Q3308		Q3313		Q3317		Q3321	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	1.6	B	4.2	B	0.2	B	2.9	B	4.7
C	4.3	C	2.9	C	2.7	C	5.0	C	0.0
E	1.0	E	4.9	E	0.0	E	2.3	E	5.0
Q3304		Q3309		Q3314		Q3318		Q3323	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	2.6	B	0.7	B	0.5	B	2.4	B	1.8
C	0.0	C	0.0	C	0.6	C	3.3	C	5.0
E	3.3	E	0.0	E	0.0	E	1.8	E	1.1

All voltages are in

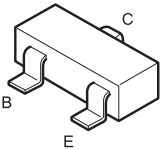
P BOARD WAVEFORMS



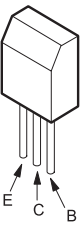
All voltages are in V

6-4. SEMICONDUCTORS

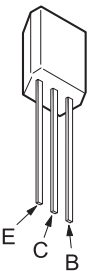
2SA1037AK-7146-QR
2SB709A-QRS-TX
2SD601A-QRS-TX
2SC2412K-T-146-QR



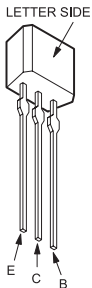
2SB734-7-34
2SC3209LK-TP



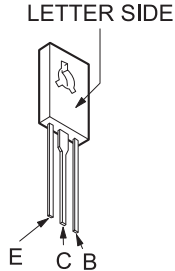
2SC1740S-QRT



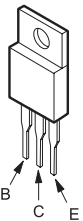
2SA1309A-QRSTA
2SC3311A-QRSTA
2SD2144S-TP-UVW



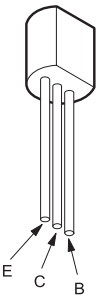
2SC3840K



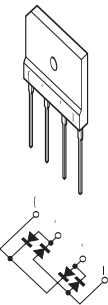
2SA1837
2SC4159-E



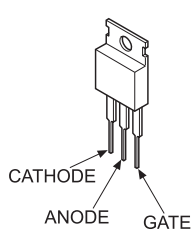
2SA1091O-TPE2
2SA993AS-QRT



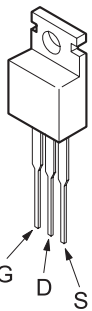
2SK2845-LB102



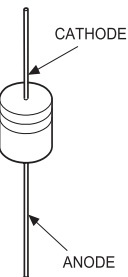
TF541M



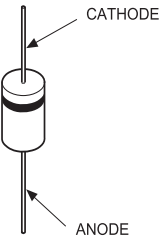
IRF614



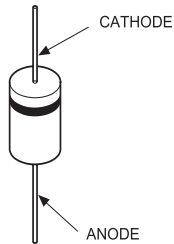
ERA38-06TP1
ERA82-004TP5
1SS133T-77
D1N20R-TA
D1NS4-TA
MTZJ-T-7712C
MTZJ-T-77-33B
MTZJ-T-77-39



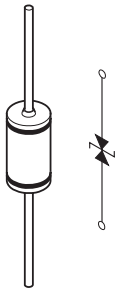
RU-1P
ERC06-15S
MTZJ-T-77-5.1C
MTZJ-T-775.6C
MTZJ-T-77-7.5A
MTZJ-T-77-10B
MTZJ-T-7730D
RD10ES-T1B
RGP10-GPKG3
RGP02-17PKG23



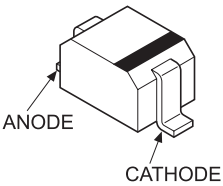
ERB44-06TP1
1SS83TD
D1NL2OU-TA
EL1Z-V1
ERA22-08TP3
GP08DPKG23
RGP10GPKG23
RU4AM-T3



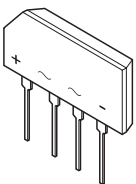
RD9.1EW-T1



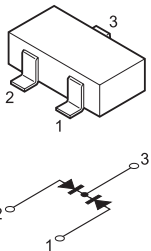
MA111-TX



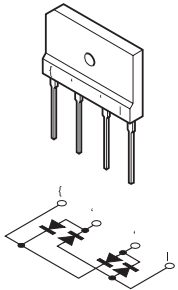
D2SB60A-F04



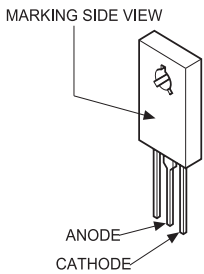
DAP202K-T-146



D4SB60L-F



D5LC20U



SECTION 7
EXPLODED VIEW

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The component parts of an assembly are indicated by the reference numbers in the remarks column.
- Items marked * are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note:

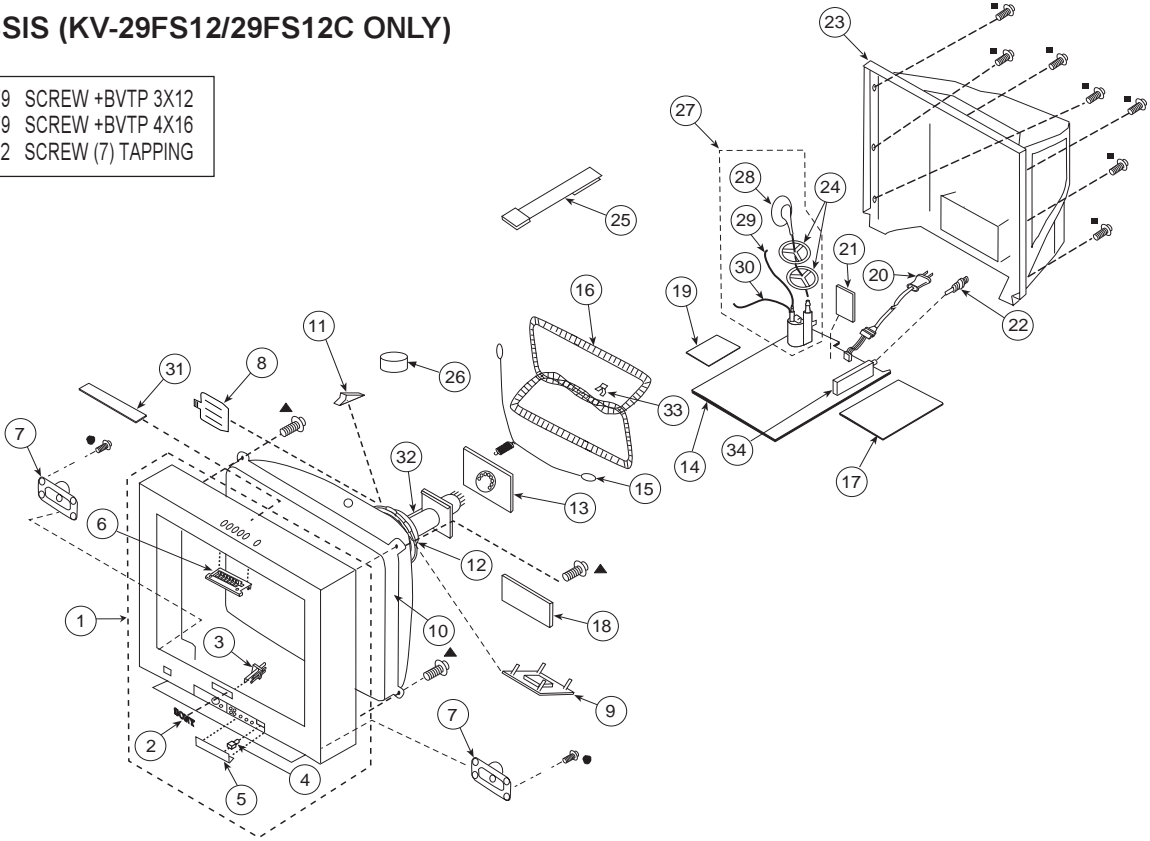
The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-1. CHASSIS (KV-29FS12/29FS12C ONLY)

- 7-685-648-79 SCREW +BVTP 3X12
- 7-685-663-79 SCREW +BVTP 4X16
- 4-046-765-12 SCREW (7) TAPPING



REF.NO.	PART.NO.	DESCRIPTION	REMARK
1	X-4037-663-1	BEZNET ASSY	2-5
2	3-704-179-31	EMBLEM (NO.9), SONY	
3	4-075-657-01	GUIDE, LED	
4	4-047-464-01	CATCHER,PUSH	
5	4-075-658-01	DOOR	
6	4-068-982-02	MULTI-BUTTON (TOP)	
7	1-529-638-11	SPEAKER (6X12CM)	
8	2-163-920-01	PLATE, TLH CORRECTION	
9	1-452-896-11	COIL, NA ROTATION (RT200)	
10	\triangle 8-735-052-05	CRT 29RSN(FOR EQUATORIAL AREA) (KV-29FS12C ONLY)	
10	\triangle 8-735-041-05	CRT 29RSN (KV-29FS12 ONLY)	

11	4-053-005-01	SPACER, DY	
12	\triangle 8-451-494-31	DY Y29RSA-S	
13	A-1332-063-A	CA (VAR) MOUNTED PC BOARD	
14	A-1299-221-A	A COMPLETE PC BOARD	
The high-voltage leads associated with the FBT on this board are not included and must be ordered separately. (See 28-30)			
15	4-036-329-01	SPRING (B), TENSION	
16	\triangle 1-419-523-11	COIL, DEGAUSSING	


REF.NO.	PART.NO.	DESCRIPTION	REMARK
17	A-1304-200-A	MA (VAR) MOUNTED PC BOARD	
18	A-1342-550-A	VA (VAR) MOUNTED PC BOARD	
19	A-1343-875-A	D (VAR) MOUNTED PC BOARD	
20	\triangle 1-769-796-31	CORD, POWER (WITH CONNECTOR) (KV-29F12C ONLY)	
20	\triangle 1-790-315-21	CORD, AC POWER (WITH CONNECTOR) (KV-29FS12 ONLY)	
21	A-1380-627-A	K (VAR) MOUNTED PC BOARD	
22	1-766-374-11	PLUG, F-PIN	
23	4-075-652-01	COVER, REAR	
24	3-704-372-71	HOLDER, HV CABLE	
25	4-062-047-01	PIECE A(110), CONV CORRECT	
26	1-452-032-00	MAGNET,DISC	
27	\triangle 1-453-310-11	FBT ASSY NX-4521/X4J4	28-30

28	1-251-374-13	HV CAP ASSY	
29	1-900-800-82	FOCUS LEAD	
30	1-900-803-22	G2 LEAD	
31	A-1372-817-A	HX MOUNTED PC BOARD	
32	\triangle 8-453-011-11	NA299-M	
33	4-062-970-01	CLIP (29RSN), DGC	
34	\triangle 8-598-431-30	TUNER, FSS BTF-WA411	

Note:

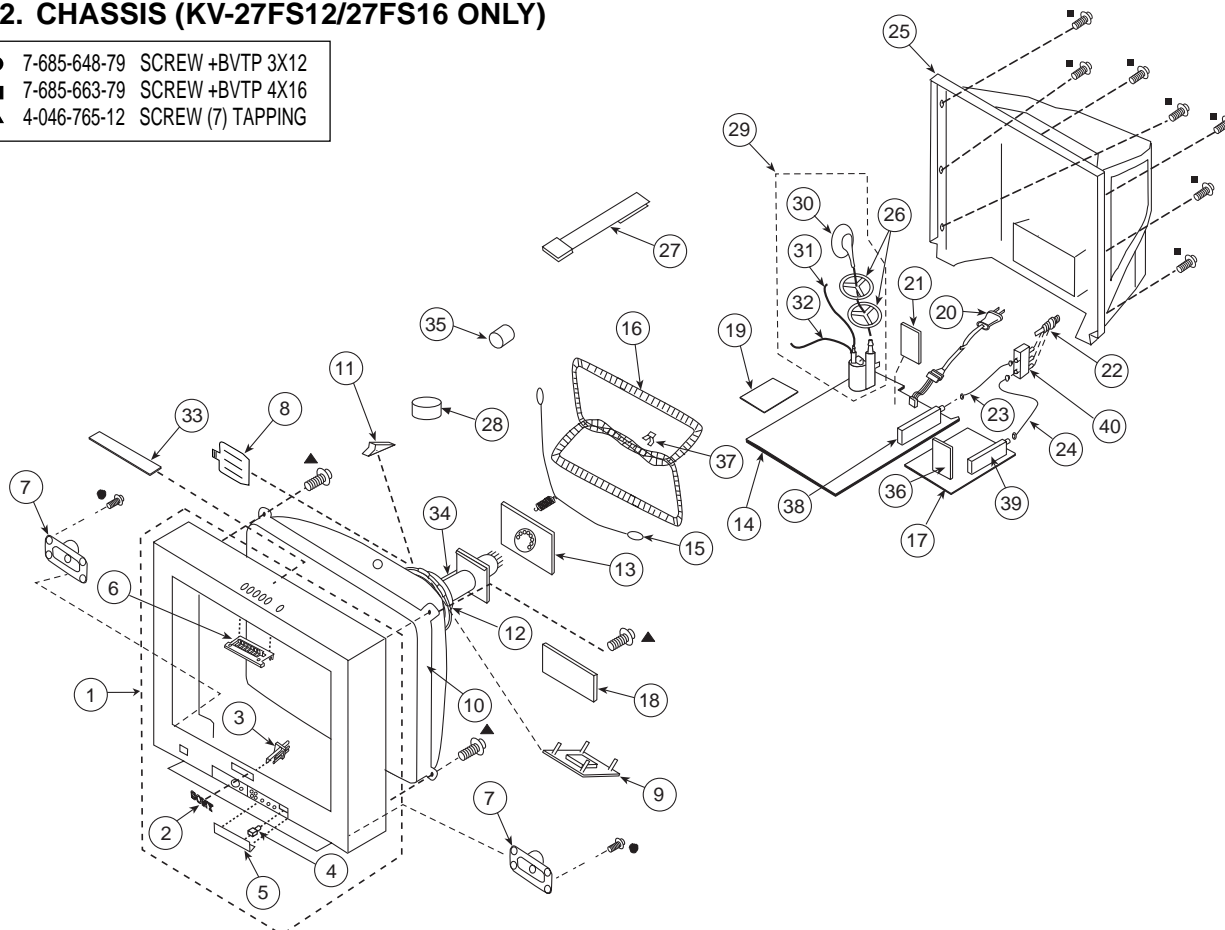
The components identified by shading and mark  are critical for safety. Replace only with part number specified.









Note:

Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-2. CHASSIS (KV-27FS12/27FS16 ONLY)

- 7-685-648-79 SCREW +BVTP 3X12
- 7-685-663-79 SCREW +BVTP 4X16
- ▲ 4-046-765-12 SCREW (7) TAPPING



REF.NO.	PART.NO.	DESCRIPTION	REMARK	REF.NO.	PART.NO.	DESCRIPTION	REMARK
1	X-4037-663-1	BEZNET ASSY	2-5	19	*	A-1343-875-A	D (VAR) MOUNTED PC BOARD
2	3-704-179-31	EMBLEM (NO.9), SONY		20		1-792-874-11	CORD, POWER (WITH CONNECTOR)
3	4-075-657-01	GUIDE, LED		21	*	A-1380-627-A	K (VAR) MOUNTED PC BOARD
4	4-047-464-01	CATCHER, PUSH		22		1-766-374-11	PLUG, F-PIN (KV-27FS16 ONLY)
5	4-075-658-01	DOOR		23	*	1-557-056-31	CABLE, P-P (KV-27FS16 ONLY)
6	4-068-982-02	MULTI-BUTTON (TOP)		24	*	1-783-800-11	CABLE, PIN (KV-27FS16 ONLY)
7	1-529-498-11	SPEAKER (13.1X6.2CM)		25		4-075-652-01	COVER, REAR
8	2-163-920-01	PLATE, TLH CORRECTION		26		3-704-372-71	HOLDER, HV CABLE
9	1-452-896-11	COIL, NA ROTATION (RT200)		27		4-062-047-01	PIECE A(110), CONV CORRECT
10	 8-735-041-05	CRT 29RSN		28		1-452-032-00	MAGNET, DISC
11	4-053-005-01	SPACER, DY		29		1-453-310-11	FBT ASSY NX-4521/X4J4 30-32
12	 8-451-494-31	DY Y29RSA-S		30		1-251-374-13	HV CAP ASSY
13	*	A-1332-063-A	CA (VAR) MOUNTED PC BOARD	31		1-900-800-82	FOCUS LEAD
14	A-1299-222-A	A COMPLETE PC BOARD		32		1-900-803-22	G2 LEAD
The high-voltage leads associated with the FBT on this board are not included and must be ordered separately. (See 30-32)				33	*	A-1372-817-A	HX MOUNTED PC BOARD
15	4-036-329-01	SPRING (B), TENSION		34		8-453-011-11	NA299-M
16	 1-419-156-21	COIL, DEGAUSSING		35		1-500-586-11	FILTER, CLAMP (FERRITE CORE)
17	*	A-1304-198-A	MA (VAR) MOUNTED PC BOARD (KV-27FS16 ONLY)	36	*	A-1190-367-A	P MOUNTED PC BOARD (KV-27FS16 ONLY)
17	*	A-1304-200-A	MA (VAR) MOUNTED PC BOARD (KV-27FS12 ONLY)	37	*	4-062-970-01	CLIP (29RSN), DGC
18	*	A-1342-550-A	VA (VAR) MOUNTED PC BOARD	38		8-598-431-30	TUNER, FSS BTF-WA411
				39		8-598-501-00	TUNER, FSS BTF-FA402 (KV-27FS16 ONLY)
				40		8-598-414-20	CHANGER, ANTENNA AS-2F

SECTION 8 ELECTRICAL PARTS LIST

A

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

The components identified by \triangle in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Items marked * are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <div style="font-size: 3em; font-weight: bold; text-align: center; margin-bottom: 10px;">A</div> <p>* A-1299-222-A A COMPLETE PC BOARD (KV-27FS12/27FS16 ONLY)</p> <p>* A-1299-221-A A COMPLETE PC BOARD (KV-29FS12/29FS12C ONLY)</p> <p>The high voltage leads associated with the FBT on this board are not included and must be ordered separately. Order the following leads when requesting this A Board:</p> <p>1-251-374-13 HV CAP ASSY</p> <p>1-900-803-22 G2 LEAD</p> <p>1-900-800-82 FOCUS LEAD</p> <p>1-533-223-11 HOLDER, FUSE</p> <p>* 4-374-846-11 COVER, CAPACITOR, CAP TYPE</p> <p>4-382-854-11 SCREW (M3X10), P, SW (+)</p> <p>4-382-854-11 SCREW (M3X10), P, SW (+)</p> <p>CAPACITOR</p> <p>C100 1-216-295-91 SHORT</p> <p>C101 1-216-295-91 SHORT</p> <p>C102 1-126-933-11 ELECT 100μF 20% 16V</p> <p>C104 1-126-941-11 ELECT 470μF 20% 25V</p> <p>C105 1-104-664-11 ELECT 47μF 20% 25V</p> <p>C204 1-163-017-00 CERAMIC CHIP 0.0047μF 10% 50V</p> <p>C205 1-126-963-11 ELECT 4.7μF 20% 50V</p> <p>C210 1-126-963-11 ELECT 4.7μF 20% 50V</p> <p>C214 1-164-346-11 CERAMIC CHIP 1μF 16V</p> <p>C215 1-164-346-11 CERAMIC CHIP 1μF 16V</p> <p>C216 1-126-963-11 ELECT 4.7μF 20% 50V</p> <p>C219 1-126-964-11 ELECT 10μF 20% 50V</p> <p>C402 1-126-943-11 ELECT 2200μF 20% 25V</p> <p>C403 1-126-957-11 ELECT 0.22μF 20% 50V</p> <p>C420 1-164-222-11 CERAMIC CHIP 0.22μF 25V</p> <p>C421 1-164-222-11 CERAMIC CHIP 0.22μF 25V</p> <p>C435 1-164-222-11 CERAMIC CHIP 0.22μF 25V (KV-29FS12/29FS12C ONLY)</p> </div>				C441	1-164-346-11	CERAMIC CHIP	1 μ F 16V
				C442	1-126-963-11	ELECT	4.7 μ F 20% 50V
				C501	1-102-114-00	CERAMIC	470PF 10% 50V
				C502	1-106-383-00	MYLAR	0.047 μ F 10% 200V
				C503	1-102-228-00	CERAMIC	470PF 10% 500V
				C504	1-102-228-00	CERAMIC	470PF 10% 500V
				C505 \triangle	1-162-116-00	CERAMIC	680PF 10% 2KV
				C506	1-162-318-11	CERAMIC	0.001 μ F 10% 500V
				C507 \triangle	1-117-717-11	FILM	17000PF 3% 1.2KV
				C508 \triangle	1-137-150-11	MYLAR	0.01 μ F 10% 100V
				C509 \triangle	1-162-116-00	CERAMIC	680PF 10% 2KV
				C510	1-107-649-11	ELECT	2.2 μ F 20% 250V
				C511	1-115-522-11	FILM	1 μ F 5% 250V
				C512 \triangle	1-106-387-00	MYLAR	0.068 μ F 10% 200V
				C513	1-106-343-00	MYLAR	0.001 μ F 10% 100V
				C514	1-109-844-11	FILM	0.68 μ F 5% 250V
				C515 \triangle	1-162-116-00	CERAMIC	680PF 10% 2KV
				C520 \triangle	1-129-722-00	FILM	0.047 μ F 5% 630V
				C521	1-164-646-11	CERAMIC	2200PF 10% 500V
				C523	1-126-941-11	ELECT	470 μ F 20% 25V
				C524	1-102-244-00	CERAMIC	220PF 10% 500V
				C525	1-107-612-11	CERAMIC	100PF 5% 500V
				C526	1-126-960-11	ELECT	1 μ F 20% 50V
				C527	1-126-965-11	ELECT	22 μ F 20% 50V
				C528	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V
				C529	1-164-161-11	CERAMIC CHIP	0.0022 μ F 10% 50V
				C530	1-164-161-11	CERAMIC CHIP	0.0022UF 10% 50V
				C531	1-106-387-00	MYLAR	0.068 μ F 10% 200V
				C533	1-126-941-11	ELECT	470 μ F 20% 25V
				C534 \triangle	1-126-964-11	ELECT	10 μ F 20% 50V
				C535	1-126-959-11	ELECT	0.47 μ F 20% 50V
				C536	1-102-228-00	CERAMIC	470PF 10% 500V
				C537 \triangle	1-126-965-11	ELECT	22 μ F 20% 50V
				C539	1-107-662-11	ELECT	22 μ F 20% 250V
				C540	1-107-645-11	ELECT	22UF 20% 160V
				C541	1-126-969-11	ELECT	220 μ F 20% 50V
				C542	1-126-967-11	ELECT	47 μ F 20% 50V
				C543	1-136-169-00	MYLAR	0.22 μ F 5% 50V
				C546 \triangle	1-126-965-11	ELECT	22 μ F 20% 50V

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
C547	\triangle 1-163-031-11	CERAMIC CHIP	0.01 μ F		50V	C637	1-163-009-11	CERAMIC CHIP	0.001 μ F	10%	50V
C548	1-104-710-11	ELECT	22 μ F		160V	C638	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C549	1-126-934-11	ELECT	220 μ F	20%	16V	C639	1-126-965-11	ELECT	22 μ F	20%	50V
C550	1-107-846-11	FILM	0.1 μ F	5%	250V	C641	1-107-679-91	ELECT	10 μ F	20%	450V
C551	\triangle 1-137-417-11	MYLAR	0.0047 μ F	10%	200V	C643	1-104-760-11	CERAMIC CHIP	0.047 μ F	10%	50V
C553	1-107-662-11	ELECT	22 μ F	20%	250V	C644	1-161-964-91	CERAMIC	0.0047 μ F		250V
C554	1-102-110-00	CERAMIC	220PF	10%	50V	C645	1-161-964-91	CERAMIC	0.0047 μ F		250V
C555	\triangle 1-117-629-11	FILM	2700PF	3%	1.2KV	C646	1-161-964-91	CERAMIC	0.0047 μ F		250V
C601	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V	C647	1-161-964-91	CERAMIC	0.0047 μ F		250V
C602	1-126-967-11	ELECT	47 μ F	20%	50V	C648	1-136-346-21	MYLAR	0.22 μ F	20%	125V
C604	1-164-182-11	CERAMIC CHIP	0.0033 μ F	10%	50V			(KV-27FS12/27FS16 ONLY)			
C606	\triangle 1-113-923-11	CERAMIC	0.0033 μ F	20%	250V	C648	1-136-346-21	MYLAR	0.22 μ F	20%	300V
C607	\triangle 1-136-311-11	MYLAR	0.47 μ F	20%	125V			(KV-29FS12/29FS12C ONLY)			
C607	\triangle 1-136-311-11	MYLAR	0.47 μ F	20%	300V	C652	1-130-471-00	MYLAR	0.001 μ F	5%	50V
		(KV-29FS12/29FS12C ONLY)				C654	1-107-636-11	ELECT	10 μ F	20%	160V
C609	1-126-968-11	ELECT	100 μ F	20%	50V	C655	\triangle 1-136-311-11	MYLAR	0.47 μ F	20%	125V
C610	1-126-964-11	ELECT	10 μ F	20%	50V			(KV-27FS12/27FS16 ONLY)			
C611	\triangle 1-113-923-11	CERAMIC	0.0033 μ F	20%	250V	C655	\triangle 1-136-311-11	MYLAR	0.47 μ F	20%	300V
C612	\triangle 1-128-717-11	ELECT	680 μ F	20%	250V			(KV-29FS12/29FS12C ONLY)			
C612	\triangle 1-128-718-11	ELECT	560 μ F	20%	400V	C657	1-104-664-11	ELECT	47 μ F	20%	25V
		(KV-29FS12/29FS12C ONLY)				C658	1-135-412-51	ELECT	1000 μ F	20%	25V
C613	1-126-964-11	ELECT	10 μ F	20%	50V			(KV-27FS12/27FS16 ONLY)			
C614	1-130-495-00	MYLAR	0.1 μ F	5%	50V	C658	1-135-573-51	ELECT	15000 μ F	20%	25V
C615	1-130-202-00	FILM	0.022 μ F	10%	400V			(KV-29FS12/29FS12C ONLY)			
C616	1-107-824-11	CERAMIC	220PF	5%	1KV	C659	1-135-573-51	ELECT	15000 μ F	20%	25V
		(KV-29FS12/29FS12C ONLY)				C699	1-117-703-11	CERAMIC	0.0047 μ F	20%	250V
C617	1-125-893-11	FILM	680PF	3%	1100KV			(KV-27FS12/27FS16 ONLY)			
C618	1-164-081-11	CERAMIC	470PF	10%	50V	C2001	1-104-664-11	ELECT	47 μ F	20%	25V
C619	1-136-356-11	MYLAR	470PF	5%	50V						
C620	1-104-665-11	ELECT	100 μ F	20%	25V						
C621	1-125-772-91	CERAMIC	1500PF	10%	2KV						
C622	1-164-625-11	CERAMIC	680PF	10%	500V						
C623	1-164-625-11	CERAMIC	680PF	10%	500V						
C624	1-131-867-51	ELECT	100 μ F		160V						
C625	1-135-412-51	ELECT	1000 μ F	20%	25V						
		(KV-27FS12/27FS16 ONLY)									
C625	1-135-573-51	ELECT	15000 μ F	20%	25V						
		(KV-29FS12/29FS12C ONLY)									
C626	1-135-573-51	ELECT	15000 μ F	20%	25V						
C627	1-136-189-00	MYLAR	0.1 μ F	10%	250V						
C628	1-104-665-11	ELECT	100 μ F	20%	25V						
C630	1-113-924-11	CERAMIC	0.0047 μ F	20%	250V						
		(KV-27FS12/27FS16 ONLY)									
C631	1-113-924-11	CERAMIC	0.0047 μ F	20%	250V						
		(KV-27FS12/27FS16 ONLY)									
C634	1-137-605-11	MYLAR	0.01 μ F	10%	250V						
C635	1-163-009-11	CERAMIC CHIP	0.001 μ F	10%	50V						
C636	1-126-970-11	ELECT	330 μ F	20%	50V						

CONNECTOR

CN301 *	1-564-507-11	PLUG, CONNECTOR 4P
CN406 *	1-564-507-11	PLUG, CONNECTOR 4P
CN460	1-573-298-21	CONNECTOR, BOARD TO BOARD 20P
CN501 *	1-580-798-11	CONNECTOR PIN (DY) 6P
CN502 *	1-564-509-11	PLUG, CONNECTOR 6P
CN504 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN506 *	1-564-508-11	PLUG, CONNECTOR 5P
CN515 *	1-564-510-11	PLUG, CONNECTOR 7P
CN602 *	1-580-843-11	PIN, CONNECTOR (POWER)
CN603 *	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P
CN2001*	1-564-511-11	PLUG, CONNECTOR 8P
CN2003*	1-564-506-11	PLUG, CONNECTOR 3P
CN2005*	1-764-333-11	PLUG, CONNECTOR 10P
CN2006*	1-764-333-11	PLUG, CONNECTOR 10P
CN2007*	1-564-512-11	PLUG, CONNECTOR 9P
CN2008*	1-564-512-11	PLUG, CONNECTOR 9P

**Note:**

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
DIODE							
D204	8-719-982-22	DIODE MTZJ-T-77-30D		D612	8-719-110-17	DIODE MTZJ-T-77-10B	
D208	8-719-110-17	DIODE MTZJ-T-77-10B		D613	8-719-063-70	DIODE D1NL20U-TA	
D209	8-719-977-22	DIODE UDZ-TE-17-9.1B		D614	8-719-063-70	DIODE D1NL20U-TA	
D210	8-719-110-17	DIODE MTZJ-T-77-10B		D615	8-719-312-10	DIODE RU4AM-T3	
D211	8-719-108-12	DIODE RD9.1EW-T1		D616	8-719-510-37	DIODE D5LC20U	
D212	8-719-110-17	DIODE MTZJ-T-77-10B		D617	8-719-110-31	DIODE MTZJ-T-77-12C	
D213	8-719-110-17	DIODE MTZJ-T-77-10B		D618	8-719-991-33	DIODE 1SS133T-77	
D214	8-719-108-12	DIODE RD9.1EW-T1		D619	8-719-110-17	DIODE MTZJ-T-77-10B	
D215	8-719-108-12	DIODE RD9.1EW-T1		D620	8-719-510-37	DIODE D5LC20U	
D230	8-719-108-12	DIODE RD9.1EW-T1		D622	8-719-077-76	DIODE D2SB60A-F04	
D231	8-719-108-12	DIODE RD9.1EW-T1		D623	8-719-948-45	DIODE ERA22-08TP3	
D232	8-719-108-12	DIODE RD9.1EW-T1		D624	8-719-991-33	DIODE 1SS133T-77	
D233	8-719-108-12	DIODE RD9.1EW-T1		D625	8-719-991-33	DIODE 1SS133T-77	
D401	8-719-110-17	DIODE MTZJ-T-77-10B		D626	8-719-063-70	DIODE D1NL20U-TA	
D501	8-719-945-80	DIODE ERC06-15S		D627	8-719-110-03	DIODE MTZJ-T-77-7100A	
D502	8-719-908-03	DIODE GP08DPKG23		D628	8-719-510-48	DIODE D1N20R-TA	
D503	8-719-908-03	DIODE GP08DPKG23		D2001	8-719-070-80	DIODE LNK0120022G	
D504	8-719-945-80	DIODE ERC06-15S		D2002	8-719-110-17	DIODE MTZJ-T-77-10B	
D505	8-719-312-10	DIODE RU4AM-T3		D2003	8-719-108-12	DIODE RD9.1EW-T1	
D506	8-719-302-43	DIODE RGP10GPKG3		D2004	8-719-921-44	DIODE MTZJ-T-77-5.1C	
D507	8-719-991-33	DIODE 1SS133T-77		D2005	8-719-921-44	DIODE MTZJ-T-77-5.1C	
D508	8-719-991-33	DIODE 1SS133T-77		FUSE			
D509	8-719-109-89	DIODE MTZJ-T-77-5.6C		F601	\triangle 1-576-193-11	FUSE 6.3A/125V (KV-27FS12/27FS16 ONLY)	
D510	8-719-908-03	DIODE GP08DPKG23		F601	\triangle 1-532-506-51	FUSE 6.3A/250V (KV-29FS12/29FS12C ONLY)	
D511	8-719-302-43	DIODE RGP10GPKG23		FERRITE BEAD			
D512	8-719-073-01	DIODE MA111-TX		FB501	1-410-397-21	FERRITE	1.1 μ H
D513	8-719-979-85	DIODE RGP15GPKG23		FB502	1-410-397-21	FERRITE	1.1 μ H
D514	8-719-979-85	DIODE RGP15GPKG23		FB503	1-410-397-21	FERRITE	1.1 μ H
D515	8-719-073-01	DIODE MA111-TX		FB600	1-412-911-11	FERRITE	0 μ H
D516	\triangle 8-719-991-33	DIODE 1SS133T-77		FB601	1-412-911-11	FERRITE	0 μ H
D517	\triangle 8-719-991-33	DIODE 1SS133T-77		FB602	1-412-911-11	FERRITE	0 μ H
D518	\triangle 8-719-921-63	DIODE MTZJ-T-77-7100X		FB603	1-412-911-11	FERRITE	0 μ H
D519	\triangle 8-719-302-43	DIODE EL12-V1		FB604	1-412-911-11	FERRITE	0 μ H
D520	\triangle 8-719-073-01	DIODE MA111-TX		FB605	1-412-911-11	FERRITE	0 μ H
D521	8-719-991-33	DIODE 1SS133T-77		FB606	1-412-911-11	FERRITE	0 μ H
D522	8-719-991-33	DIODE 1SS133T-77		FB609	1-412-911-11	FERRITE	0 μ H
D601	8-719-991-33	DIODE 1SS133T-77		FB610	1-412-911-11	FERRITE	0 μ H
D602	8-719-991-33	DIODE 1SS133T-77		IC			
D603	8-719-982-26	DIODE MTZJ-T-77-33B		IC401	8-759-490-17	IC TDA7057AQ/N2 (KV-27FS12/27FS16 ONLY)	
D604	8-719-028-72	DIODE RGP02-17PKG23		IC402	8-759-573-40	IC TDA8580Q/N1 (KV-29FS12/29FS12C ONLY)	
D605	\triangle 8-719-510-53	DIODE D4SB60L-F		IC501	\triangle 8-759-700-07	IC NJM2903M-TE2	
D606	\triangle 8-719-108-18	DIODE TF541M		IC502	8-759-980-58	IC TDA8172	
D607	8-719-991-33	DIODE 1SS133T-77					
D608	8-719-110-53	DIODE MTZJ-T-77-20B					
D609	8-719-311-31	DIODE RU-1P (KV-29FS12/29FS12C ONLY)					
D610	8-719-510-02	DIODE D1NS4-TA					
D611	8-719-063-70	DIODE D1NL20U-TA					

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC601 \triangle	8-749-015-61	IC STR-F6626 (KV-27FS12/27FS16 ONLY)	
IC601 \triangle	8-749-014-48	IC STR-F6656 (KV-29FS12/29FS12C ONLY)	
IC602 \triangle	8-749-016-47	IC EA135-F12	
IC603	8-759-198-03	IC PQ09RF21	
IC604	8-759-701-75	IC NJM7805FA	
IC2001	8-742-212-20	HYB IC SBX3081-71	

JACK

J201	1-794-119-11	TERMINAL BLOCK, S 4P
J202	1-794-267-11	JACK, PIN 3P
J203	1-794-118-11	JACK BLOCK, PIN 3P
J205	1-794-116-11	JACK BLOCK, PIN 2P
J206	1-794-117-11	JACK BLOCK, PIN 2P
J402	1-794-116-11	JACK BLOCK, PIN 2P

CHIP CONDUCTOR

JR001	1-216-295-91	SHORT
JR002	1-216-295-91	SHORT
JR403	1-216-295-91	SHORT
JR405	1-216-295-91	SHORT (KV-29FS12/29FS12C ONLY)
JR411	1-216-295-91	SHORT
JR471	1-216-295-91	SHORT (KV-29FS12/29FS12C ONLY)
JR472	1-216-295-91	SHORT
JR502	1-216-295-91	SHORT
JR503	1-216-295-91	SHORT
JR505	1-216-295-91	SHORT (KV-27FS12/27FS16 ONLY)
JR522	1-216-295-91	SHORT
JR523	1-216-295-91	SHORT
JR526	1-216-295-91	SHORT
JR527	1-216-295-91	SHORT

COIL

L101	1-412-029-11	INDUCTOR CHIP	10 μ H
L102	1-412-032-11	INDUCTOR CHIP	100 μ H
L103	1-412-029-11	INDUCTOR CHIP	10 μ H
L501	1-409-955-11	INDUCTOR	8mH
L502	1-412-552-11	INDUCTOR	2.2mH
L503	1-406-677-11	INDUCTOR	10mH
L504	1-412-533-21	INDUCTOR	47 μ H
L505	1-406-978-11	INDUCTOR	150 μ H
L506	1-406-677-11	INDUCTOR	10mH
L507	1-412-552-11	INDUCTOR	2.2mH
L510 \triangle	1-412-528-11	INDUCTOR	18 μ H
L603	1-412-529-11	INDUCTOR	22 μ H

REF.NO.	PART NO.	DESCRIPTION	REMARK
L604	1-412-525-31	INDUCTOR	10 μ H
L605	1-412-529-11	INDUCTOR	22 μ H

PHOTO COUPLER

PH601 \triangle	8-749-010-64	PHOTO COUPLER PC123FY2
-------------------	--------------	------------------------

IC LINK

PS401 \triangle	1-576-336-21	LINK, IC (KV-27FS12/27FS16 ONLY)
PS401 \triangle	1-532-686-21	LINK, IC 2.7A/150V (KV-29FS12/29FS12C ONLY)

TRANSISTOR

Q101	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q410	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q411	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q501	8-729-140-50	TRANSISTOR 2SC3209LK-TP
Q502 \triangle	8-729-046-07	TRANSISTOR 2SD2578-YB
Q503	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q504	8-729-809-29	TRANSISTOR 2SC4159-E
Q505 \triangle	8-729-200-17	TRANSISTOR 2SA1091O-TPE2
Q506 \triangle	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q507 \triangle	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q601	8-729-922-37	TRANSISTOR 2SD2144S-TP-UVW
Q602	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA
Q603	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA
Q604	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q605 \triangle	8-729-046-40	TRANSISTOR 2SK2663
Q606	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q607	8-729-922-37	TRANSISTOR 2SD2144S-TP-UVW
Q608	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q609	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA

RESISTOR

R105	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R107	1-216-025-91	RES-CHIP	100	5%	1/10W
R108	1-216-025-91	RES-CHIP	100	5%	1/10W
R115	1-216-295-91	SHORT			
R201	1-216-113-00	RES-CHIP	470K	5%	1/10W
R202	1-216-113-00	RES-CHIP	470K	5%	1/10W
R204	1-216-081-00	RES-CHIP	22K	5%	1/10W
R205	1-216-085-00	RES-CHIP	33K	5%	1/10W
R208	1-215-924-00	METAL OXIDE	15K	5%	3W
R214	1-216-113-00	RES-CHIP	470K	5%	1/10W
R215	1-216-113-00	RES-CHIP	470K	5%	1/10W
R235	1-216-113-00	RES-CHIP	470K	5%	1/10W
R237	1-216-033-00	RES-CHIP	220	5%	1/10W

KV-27FS12/27FS16/29FS12/29FS12C

A

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R238	1-216-033-00	RES-CHIP	220 5% 1/10W	R510	1-249-411-11	CARBON	330 5% 1/4W
R239	1-216-113-00	RES-CHIP	470K 5% 1/10W	R511	1-249-377-11	CARBON	0.47 5% 1/4W
R401	1-216-080-00	RES-CHIP	20K 5% 1/10W	R512	1-215-910-00	METAL OXIDE	68 5% 3W
		(KV-29FS12/29FS12C ONLY)		R513 \triangle	1-215-907-11	METAL OXIDE	22 5% 3W
R402	1-216-073-00	RES-CHIP	10K 5% 1/10W	R514	1-216-683-11	METAL CHIP	22K 0.50% 1/10W
		(KV-29FS12/29FS12C ONLY)					
R411	1-249-417-11	CARBON	1K 5% 1/4W	R516	1-249-425-11	CARBON	4.7K 5% 1/4W
R412	1-216-113-00	RES-CHIP	470K 5% 1/10W	R517	1-215-445-00	METAL	10K 1% 1/4W
R413	1-216-113-00	RES-CHIP	470K 5% 1/10W	R518	1-249-427-11	CARBON	6.8K 5% 1/4W
R414	1-249-417-11	CARBON	1K 5% 1/4W	R519	1-249-427-11	CARBON	6.8K 5% 1/4W
R420	1-216-073-00	RES-CHIP	10K 5% 1/10W	R520 \triangle	1-215-884-11	METAL OXIDE	47 5% 2W
		(KV-27FS12/27FS16 ONLY)					
R421	1-249-425-11	CARBON	4.7K 5% 1/4W	R521	1-249-413-11	CARBON	470 5% 1/4W
R422	1-249-389-11	CARBON	4.7 5% 1/4W	R522	1-249-417-11	CARBON	1K 5% 1/4W
R426	1-216-009-91	RES-CHIP	22 5% 1/10W	R523	1-216-073-00	RES-CHIP	10K 5% 1/10W
		(KV-29FS12/29FS12C ONLY)		R524	1-249-429-11	CARBON	10K 5% 1/4W
R429	1-216-113-00	RES-CHIP	470K 5% 1/10W	R525 \triangle	1-208-804-11	METAL CHIP	8.2K 0.50% 1/10W
R430	1-216-049-91	RES-CHIP	1K 5% 1/10W				
R431	1-216-049-91	RES-CHIP	1K 5% 1/10W	R526	1-208-814-91	METAL CHIP	22K 0.50% 1/10W
				R528	1-215-429-00	METAL	2.2K 1% 1/4W
R433	1-216-113-00	RES-CHIP	470K 5% 1/10W	R529	1-216-109-00	RES-CHIP	330K 5% 1/10W
R436	1-216-073-00	RES-CHIP	10K 5% 1/10W	R530	1-216-077-91	RES-CHIP	15K 5% 1/10W
		(KV-27FS12/27FS16 ONLY)		R532	1-215-437-00	METAL	4.7K 1% 1/4W
R436	1-216-081-00	RES-CHIP	22K 5% 1/10W	R533	1-215-457-00	METAL	33K 1% 1/4W
		(KV-29FS12/29FS12C ONLY)		R534	1-215-458-00	METAL	36K 1% 1/4W
R437	1-216-073-00	RES-CHIP	10K 5% 1/10W	R535	1-249-441-11	CARBON	100K 5% 1/4W
		(KV-27FS12/27FS16 ONLY)		R536 \triangle	1-214-798-21	METAL	1.8 1% 1/2W
R437	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R537	1-249-401-11	CARBON	47 5% 1/4W
		(KV-29FS12/29FS12C ONLY)					
R438	1-216-073-00	RES-CHIP	10K 5% 1/10W	R538 \triangle	1-215-889-00	METAL OXIDE	330 5% 2W
		(KV-27FS12/27FS16 ONLY)		R539	1-249-385-11	CARBON	2.2 5% 1/4W
R438	1-216-081-00	RES-CHIP	22K 5% 1/10W	R540	1-215-445-00	METAL	10K 1% 1/4W
		(KV-29FS12/29FS12C ONLY)		R541	1-249-429-11	CARBON	10K 5% 1/4W
R439	1-216-073-00	RES-CHIP	10K 5% 1/10W	R543	1-247-887-00	CARBON	220K 5% 1/4W
		(KV-27FS12/27FS16 ONLY)					
R439	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R544	1-249-377-11	CARBON	0.47 5% 1/4W
		(KV-29FS12/29FS12C ONLY)		R545	1-215-873-00	METAL OXIDE	4.7K 5% 1W
R440	1-216-097-91	RES-CHIP	100K 5% 1/10W	R546 \triangle	1-249-377-11	CARBON	0.47 5% 1/4W
				R547	1-216-455-21	METAL OXIDE	560 5% 2W
R441	1-216-081-00	RES-CHIP	22K 5% 1/10W	R548	1-216-377-11	METAL OXIDE	4.7 5% 2W
R442	1-216-025-91	RES-CHIP	100 5% 1/10W				
R445	1-216-073-00	RES-CHIP	10K 5% 1/10W	R549 \triangle	1-260-288-11	CARBON	0.47 5% 1/2W
R446	1-249-435-11	CARBON	33K 5% 1/4W	R550 \triangle	1-260-288-11	CARBON	0.47 5% 1/2W
R447	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R551	1-215-907-11	METAL OXIDE	22 5% 3W
				R553 \triangle	1-216-363-00	METAL OXIDE	0.33 5% 2W
R454	1-216-025-91	RES-CHIP	100 5% 1/10W	R554 \triangle	1-249-429-11	CARBON	10K 5% 1/4W
R501	1-249-425-11	CARBON	4.7K 5% 1/4W				
R502 \triangle	1-216-455-21	METAL OXIDE	560 5% 2W	R555 \triangle	1-247-895-91	CARBON	470K 5% 1/4W
R503 \triangle	1-249-425-11	CARBON	4.7K 5% 1/4W	R556 \triangle	1-249-417-11	CARBON	1K 5% 1/4W
R505	1-249-401-11	CARBON	47 5% 1/4W	R557 \triangle	1-247-895-91	CARBON	470K 5% 1/4W
				R558 \triangle	1-216-097-91	RES-CHIP	100K 5% 1/10W
R506 \triangle	1-215-883-11	METAL OXIDE	33 5% 2W	R559 \triangle	1-216-073-00	RES-CHIP	10K 5% 1/10W
R507 \triangle	1-260-328-11	CARBON	1K 5% 1/2W				
R508	1-247-863-91	CARBON	22K 5% 1/4W	R560 \triangle	1-215-902-11	METAL OXIDE	47K 5% 1W
R509 \triangle	1-215-891-11	METAL OXIDE	680 5% 2W	R561 \triangle	1-249-406-11	CARBON	120 5% 1/4W
				R562 \triangle	1-208-808-11	METAL CHIP	12K 0.50% 1/10W
				R563 \triangle	1-247-863-91	CARBON	22K 5% 1/4W

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

The components identified by \boxtimes in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding x-ray radiation. Should replacement be required, replace only with the value originally used.

A

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
\boxtimes R564	\triangle 1-208-836-11	METAL CHIP	180K 0.50% 1/10W	R638	1-249-402-11	CARBON 56 5% 1/4W (KV-29FS12/29FS12C ONLY)	
R565	\triangle 1-249-429-11	CARBON	10K 5% 1/4W	R639	1-249-421-11	CARBON 2.2K 5% 1/4W	
R566	\triangle 1-216-073-00	RES-CHIP	10K 5% 1/10W	R640	1-249-417-11	CARBON 1K 5% 1/4W	
R567	\triangle 1-216-073-00	RES-CHIP	10K 5% 1/10W	R641	\triangle 1-216-362-11	METAL OXIDE 0.27 5% 2W	
R568	\triangle 1-215-882-00	METAL OXIDE 22 5% 2W		R642	1-216-089-91	RES-CHIP 47K 5% 1/10W	
R569	1-214-798-21	METAL 1.8 1% 1/2W		R643	1-249-419-11	CARBON 1.5K 5% 1/4W	
R570	1-247-863-91	CARBON 22K 5% 1/4W		R644	1-247-843-11	CARBON 3.3K 5% 1/4W	
R571	1-216-065-91	RES-CHIP 4.7K 5% 1/10W		R645	1-215-898-11	METAL OXIDE 10K 5% 2W	
R572	1-216-065-91	RES-CHIP 4.7K 5% 1/10W		R646	1-249-419-11	CARBON 1.5K 5% 1/4W	
R601	\triangle 1-219-513-11	CARBON 4.7M 5% 1/2W (KV-27FS12/27FS16 ONLY)		R648	1-215-908-00	METAL OXIDE 33 5% 3W	
R602	\triangle 1-249-389-11	CARBON 4.7 5% 1/4W		R649	1-249-417-11	CARBON 1K 5% 1/4W	
R603	1-215-485-00	METAL 470K 1% 1/4W		R650	1-216-387-11	METAL OXIDE 0.68 5% 3W	
R607	1-215-859-00	METAL OXIDE 22 5% 1W		R651	1-249-429-11	CARBON 10K 5% 1/4W	
R608	1-240-205-11	CARBON 22M 5% 1/2W		R653	1-216-049-91	RES-CHIP 1K 5% 1/10W	
R609	1-216-049-91	RES-CHIP 1K 5% 1/10W		R655	1-216-049-91	RES-CHIP 1K 5% 1/10W	
R610	1-216-073-00	RES-CHIP 10K 5% 1/10W		R656	1-249-429-11	CARBON 10K 5% 1/4W	
R611	1-216-089-91	RES-CHIP 47K 5% 1/10W		R658	1-216-387-11	METAL OXIDE 0.68 5% 3W	
R612	1-216-045-00	RES-CHIP 680 5% 1/10W		R659	1-215-857-11	METAL OXIDE 10 5% 1W	
R613	\triangle 1-219-512-11	CARBON 2.2M 5% 1/2W		R660	\triangle 1-215-924-00	METAL OXIDE 15K 5% 3W (KV-27FS12/27FS16 ONLY)	
R614	1-249-413-11	CARBON 470 5% 1/4W		R660	\triangle 1-216-485-11	METAL OXIDE 5.6K 5% 3W (KV-29FS12/29FS12C ONLY)	
R615	\triangle 1-218-265-11	METAL 8.2M 5% 1W (KV-29FS12/29FS12C ONLY)		R661	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R616	\triangle 1-260-302-51	CARBON 6.8 5% 1/2W		R662	\triangle 1-216-485-11	METAL OXIDE 5.6K 5% 3W (KV-29FS12/29FS12C ONLY)	
R617	1-216-009-91	RES-CHIP 22 5% 1/10W		R663	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R618	1-249-440-11	CARBON 82K 5% 1/4W		R2001	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R619	1-249-437-11	CARBON 47K 5% 1/4W		R2002	1-216-053-00	RES-CHIP 1.5K 5% 1/10W	
R620	1-249-417-11	CARBON 1K 5% 1/4W		R2003	1-249-425-11	CARBON 4.7K 5% 1/4W	
R621	\triangle 1-240-251-11	CEMENTED 6.8 5% 10W		R2004	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R622	1-249-441-11	CARBON 100K 5% 1/4W		R2005	1-216-295-91	SHORT	
R623	\triangle 1-260-324-11	CARBON 470 5% 1/2W					
R624	\triangle 1-249-429-11	CARBON 10K 5% 1/4W					
R625	1-249-437-11	CARBON 47K 5% 1/4W					
R626	\triangle 1-220-926-11	FUSIBLE 0.47 10% 1/2W					
R627	1-215-483-00	METAL 390K 1% 1/4W (KV-27FS12/27FS16 ONLY)					
R627	1-215-479-00	METAL 270K 1% 1/4W (KV-29FS12/29FS12C ONLY)					
R630	1-249-421-11	CARBON 2.2K 5% 1/4W					
R631	1-215-929-11	METAL OXIDE 100K 5% 3W (KV-29FS12/29FS12C ONLY)					
R632	\triangle 1-216-361-21	METAL OXIDE 0.22 5% 2W					
R633	1-249-415-11	CARBON 680 5% 1/4W					
R634	1-216-073-00	RES-CHIP 10K 5% 1/10W					
R635	1-216-057-00	RES-CHIP 2.2K 5% 1/10W					
R637	\triangle 1-216-485-11	METAL OXIDE 5.6K 5% 3W (KV-29FS12/29FS12C ONLY)					
R638	1-249-399-11	CARBON 33 5% 1/4W (KV-27FS12/27FS16 ONLY)					

RELAY

RY601	\triangle 1-755-198-11	RELAY
RY602	\triangle 1-755-266-11	RELAY, AC POWER

SWITCH

S2007	1-762-816-11	SWITCH, TACTILE
S2008	1-762-816-11	SWITCH, TACTILE

SWITCH

SW501	1-572-707-11	SWITCH, LEVER
SW502	1-572-707-11	SWITCH, LEVER

**Note:**

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
TRANSFORMER							
T501	\triangle 1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE		C708	1-136-165-00	MYLAR	0.1 μ F 5% 50V
T503	\triangle 1-426-981-11	TRANSFORMER, FERRITE (PMT)		C709	1-126-934-11	ELECT	220 μ F 20% 16V
T504	\triangle 1-431-693-11	TRANSFORMER, HORIZONTAL LINEAR		C710	1-126-964-11	ELECT	10 μ F 20% 50V
T505	\triangle 1-453-310-11	FBT ASSY NX-4521//X4J4		CONNECTOR			
T602	\triangle 1-435-617-11	TRANSFORMER, LINE FILTER (KV-27FS12/27FS16 ONLY)		CN701 *	1-564-506-11	PLUG, CONNECTOR 3P	
T602	\triangle 1-426-717-11	TRANSFORMER, LINE FILTER (LFT) (KV-29FS12/29FS12C ONLY)		CN702	1-695-915-11	TAB (CONTACT)	
T603	\triangle 1-433-806-11	TRANSFORMER, REGULAT (KV-27FS12/27FS16 ONLY)		CN704	1-695-915-11	TAB (CONTACT)	
T603	\triangle 1-433-807-11	TRANSFORMER, REGULAT (KV-29FS12/29FS12C ONLY)		CN705 *	1-564-512-11	PLUG, CONNECTOR 9P	
T604	\triangle 1-431-852-11	TRANSFORMER, CONVERTER (SRT)		CN706 *	1-564-509-11	PLUG, CONNECTOR 6P	
THERMISTOR				DIODE			
TH501	1-800-193-00	THERMISTOR		D701	8-719-901-83	DIODE 1SS83TD	
TH601	\triangle 1-803-586-11	THERMISTOR, NTC		D702	8-719-901-83	DIODE 1SS83TD	
THERMISTOR				D703	8-719-901-83	DIODE 1SS83TD	
THP601	\triangle 1-803-540-11	THERMISTOR		D704	8-719-302-43	DIODE RGP10GPKG23	
TUNER				IC			
TU101	\triangle 8-598-431-30	TUNER, FSS BTF-WA411		IC701	8-759-803-42	IC LA6500-FA	
VARISTOR				IC702	8-759-562-43	IC TDA6108JF/N1B	
VDR601	\triangle 1-803-585-11	VARISTOR ENE271D-10A (KV-27FS12/27FS16 ONLY)		JACK			
VDR601	\triangle 1-803-967-11	VARISTOR (ENE621D-14A) (KV-29FS12/29FS12C ONLY)		J701	\triangle 1-451-470-21	SOCKET, CRT	
CAPACITOR				COIL			
C701	1-104-664-11	ELECT	47 μ F 20% 25V	L701	1-408-613-31	INDUCTOR	68 μ H
C702	1-136-165-00	MYLAR	0.1 μ F 5% 50V	TRANSISTOR			
C703	1-104-664-11	ELECT	47 μ F 20% 25V	Q700	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA	
C704	1-107-651-11	ELECT	4.7 μ F 20% 250V	Q701	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA	
C705	1-107-652-11	ELECT	10 μ F 20% 250V	RESISTOR			
C707	1-162-114-00	CERAMIC	0.0047 μ F 2KV	R700	1-247-863-91	CARBON	22K 5% 1/4W
				R701	1-249-429-11	CARBON	10K 5% 1/4W
				R702	1-247-815-91	CARBON	220 5% 1/4W
				R703	1-247-807-31	CARBON	100 5% 1/4W
				R704	1-249-421-11	CARBON	2.2K 5% 1/4W
				R705	1-249-429-11	CARBON	10K 5% 1/4W
				R706	1-249-381-11	CARBON	1 5% 1/4W
				R707	1-249-383-11	CARBON	1.5 5% 1/4W
				R708	1-247-807-31	CARBON	100 5% 1/4W
				R709	1-247-807-31	CARBON	100 5% 1/4W



* A-1332-063-A CA (VAR) MOUNTED PC BOARD

4-382-854-11 SCREW (M3X10),P, SW (+)

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
R710	1-247-807-31	CARBON	100	5%	1/4W	DIODE					
R711	1-260-099-11	CARBON	1K	5%	1/2W	D801	8-719-109-89	DIODE MTZJ-T-77-5.6C			
R712	1-260-099-11	CARBON	1K	5%	1/2W	D802	8-719-991-33	DIODE 1SS133T-77			
R713	1-260-099-11	CARBON	1K	5%	1/2W	D808	8-719-991-33	DIODE 1SS133T-77			
R714	1-260-087-11	CARBON	100	5%	1/2W	D809	8-719-110-41	DIODE MTZJ-T-77-15B			
						D810	8-719-970-87	DIODE ERA38-06TP1			
R715	1-260-132-11	CARBON	560K	5%	1/2W						
R716	1-260-123-11	CARBON	100K	5%	1/2W	D811	8-719-970-87	DIODE ERA38-06TP1			
R717	1-216-373-11	METAL OXIDE	2.2	5%	2W	D812	8-719-300-33	DIODE ERB44-06TP1			
R719	1-215-888-00	METAL OXIDE	220	5%	2W	D813	8-719-991-33	DIODE 1SS133T-77			
R720	1-249-421-11	CARBON	2.2K	5%	1/4W	D814	8-719-991-33	DIODE 1SS133T-77			
R721	1-249-421-11	CARBON	2.2K	5%	1/4W						
VARIABLE RESISTOR						IC					
RV701	1-241-656-11	RES, ADJ, METAL FILM 110M				IC801	8-759-700-42	IC NJM2904D			
						IC802	8-759-659-67	IC NJM2903D			
						IC803	8-759-659-67	IC NJM2903D			
<div><div>D</div><div></div></div>						CHIP CONDUCTOR					
						JR801	1-216-295-91	SHORT			
CAPACITOR						COIL					
C801	1-117-534-91	ELECT	1μF	20%	100V	L803	1-406-677-11	INDUCTOR	10mH		
C802	1-117-511-91	ELECT	10μF	20%	50V						
C803	1-136-191-11	MYLAR	0.22μF	5%	63V						
C804	1-136-191-11	MYLAR	0.22μF	5%	63V						
C807	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V						
C808	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V						
C809	1-110-501-11	CERAMIC CHIP	0.33μF	10%	16V						
C810	1-130-495-00	MYLAR	0.1μF	5%	50V						
C812	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V						
C814	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V						
C815	1-129-718-00	FILM	0.022μF	5%	630V						
C816	1-102-244-00	CERAMIC	220PF	10%	500V						
C817	1-136-558-11	FILM	0.0039μF	5%	630V						
C818	1-164-735-51	CERAMIC	0.0015μF	10%	500V						
C820	1-109-954-11	ELECT	0.47μF	20%	160V						
C821	1-163-021-91	CERAMIC CHIP	0.01μF	10%	50V						
C823	1-130-967-00	FILM	0.0027μF	5%	50V						
C824	1-104-760-11	CERAMIC CHIP	0.047μF	10%	50V						
C825	1-137-150-11	MYLAR	0.01μF	5%	50V						
C826	1-163-251-11	CERAMIC CHIP	100PF	5%	50V						
C862	1-117-511-91	ELECT	10μF	20%	50V						
CONNECTOR						RESISTOR					
CN800 *	1-564-510-11	PLUG, CONNECTOR 7P				R801	1-216-089-91	RES-CHIP	47K	5%	1/10W
CN801 *	1-564-507-11	PLUG, CONNECTOR 4P				R802	1-216-073-00	RES-CHIP	10K	5%	1/10W
CN802 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P				R803	1-216-081-00	RES-CHIP	22K	5%	1/10W
						R804	1-216-073-00	RES-CHIP	10K	5%	1/10W
						R805	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
						R806	1-216-081-00	RES-CHIP	22K	5%	1/10W
						R807	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
						R808	1-216-073-00	RES-CHIP	10K	5%	1/10W
						R809	1-216-081-00	RES-CHIP	22K	5%	1/10W
						R811	1-216-025-91	RES-CHIP	100	5%	1/10W

**Note:**

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
R812	1-216-061-00	RES-CHIP	3.3K	5%	1/10W	R874	1-216-037-00	RES-CHIP	330	5%	1/10W
R813	1-216-041-00	RES-CHIP	470	5%	1/10W	R875	1-216-035-00	RES-CHIP	270	5%	1/10W
R815	1-215-862-11	METAL OXIDE	68	5%	1W	R890	1-216-097-91	RES-CHIP	100K	5%	1/10W
R816	1-247-807-31	CARBON	100	5%	1/4W						
R817	1-216-091-00	RES-CHIP	56K	5%	1/10W						
R819	1-216-089-91	RES-CHIP	47K	5%	1/10W						
R820	1-216-683-11	METAL CHIP	22K	0.50%	1/10W						
R821	1-216-077-91	RES-CHIP	15K	5%	1/10W						
R822	1-216-065-91	RES-CHIP	4.7K	5%	1/10W						
R823	1-216-065-91	RES-CHIP	4.7K	5%	1/10W						
R824	1-208-830-11	METAL CHIP	100K	0.50%	1/10W						
R825	1-208-830-11	METAL CHIP	100K	0.50%	1/10W						
R827	1-216-065-91	RES-CHIP	4.7K	5%	1/10W						
R828	1-216-085-00	RES-CHIP	33K	5%	1/10W						
R829	1-208-846-11	METAL CHIP	470K	0.50%	1/10W						
R830	1-216-295-91	SHORT									
R831	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R832	1-216-067-00	RES-CHIP	5.6K	5%	1/10W						
R833	1-216-687-11	METAL CHIP	33K	0.50%	1/10W						
R834	1-216-065-91	RES-CHIP	4.7K	5%	1/10W						
R835	1-216-057-00	RES-CHIP	2.2K	5%	1/10W						
R836	1-216-057-00	RES-CHIP	2.2K	5%	1/10W						
R837	1-208-808-11	METAL CHIP	12K	0.50%	1/10W						
R838	1-247-807-31	CARBON	100	5%	1/4W						
R839	1-216-025-91	RES-CHIP	100	5%	1/10W						
R840	1-216-093-91	RES-CHIP	68K	5%	1/10W						
R841	1-208-802-11	METAL CHIP	6.8K	0.50%	1/10W						
R842	1-208-796-11	METAL CHIP	3.9K	0.50%	1/10W						
R845	1-249-441-11	CARBON	100K	5%	1/4W						
R846	1-249-441-11	CARBON	100K	5%	1/4W						
R847	1-249-441-11	CARBON	100K	5%	1/4W						
R848	1-215-876-00	METAL OXIDE	15K	5%	1W						
R849	1-215-920-11	METAL OXIDE	3.3K	5%	3W						
R851	1-215-894-11	METAL OXIDE	2.2K	5%	2W						
R854	1-216-069-00	RES-CHIP	6.8K	5%	1/10W						
R855	1-216-089-91	RES-CHIP	47K	5%	1/10W						
R860	1-208-806-11	METAL CHIP	10K	0.50%	1/10W						
R862	1-216-057-00	RES-CHIP	2.2K	5%	1/10W						
R863	1-216-057-00	RES-CHIP	2.2K	5%	1/10W						
R864	1-216-033-00	RES-CHIP	220	5%	1/10W						
R865	1-216-097-91	RES-CHIP	100K	5%	1/10W						
R866	1-249-429-11	CARBON	10K	5%	1/4W						
R867	1-216-073-00	RES-CHIP	10K	5%	1/10W						
R868	1-216-073-00	RES-CHIP	10K	5%	1/10W						
R869	1-216-097-91	RES-CHIP	100K	5%	1/10W						
R870	1-216-057-00	RES-CHIP	2.2K	5%	1/10W						
R871	1-215-489-00	METAL	680K	1%	1/4W						
R872	1-216-121-91	RES-CHIP	1M	5%	1/10W						
R873	1-216-073-00	RES-CHIP	10K	5%	1/10W						

TRANSFORMER

T801 1-424-584-11 TRANSFORMER, DYNAMIC FOCUS



* A-1372-817-A HX MOUNTED PC BOARD

CONNECTOR

CN4001* 1-564-518-11 PLUG, CONNECTOR 3P

RESISTOR

R4001	1-216-025-91	RES-CHIP	100	5%	1/10W
R4002	1-216-045-00	RES-CHIP	680	5%	1/10W
R4003	1-216-047-91	RES-CHIP	820	5%	1/10W
R4004	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4005	1-216-069-00	RES-CHIP	6.8K	5%	1/10W

SWITCH

S4001	1-762-196-21	SWITCH, TACTILE
S4002	1-762-196-21	SWITCH, TACTILE
S4003	1-762-196-21	SWITCH, TACTILE
S4004	1-762-196-21	SWITCH, TACTILE
S4005	1-762-196-21	SWITCH, TACTILE
S4006	1-762-196-21	SWITCH, TACTILE



* A-1380-627-A K (VAR) MOUNTED PC BOARD

CAPACITOR

C201	1-126-963-11	ELECT	4.7μF	20%	50V
C202	1-126-963-11	ELECT	4.7μF	20%	50V
C404	1-164-182-11	CERAMIC CHIP	0.0033μF	10%	50V
C405	1-163-034-00	CERAMIC CHIP	0.033μF		50V
C406	1-163-011-11	CERAMIC CHIP	0.0015μF	10%	50V
C407	1-164-222-11	CERAMIC CHIP	0.22μF		25V
C408	1-164-222-11	CERAMIC CHIP	0.22μF		25V
C409	1-163-011-11	CERAMIC CHIP	0.0015μF	10%	50V
C410	1-163-034-00	CERAMIC CHIP	0.033μF		50V
C411	1-164-182-11	CERAMIC CHIP	0.0033μF	10%	50V

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK
C412	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V
C413	1-126-963-11	ELECT	4.7 μ F 20% 50V
C414	1-126-963-11	ELECT	4.7 μ F 20% 50V
C415	1-126-963-11	ELECT	4.7 μ F 20% 50V
C416	1-126-963-11	ELECT	4.7 μ F 20% 50V
C417	1-126-963-11	ELECT	4.7 μ F 20% 50V
C418	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V
C419	1-164-346-11	CERAMIC CHIP	1 μ F 16V
C422	1-126-963-11	ELECT	4.7 μ F 20% 50V
C423	1-126-963-11	ELECT	4.7 μ F 20% 50V
C446	1-126-933-11	ELECT	100 μ F 20% 16V
C447	1-126-961-11	ELECT	2.2 μ F 20% 50V
C448	1-126-961-11	ELECT	2.2 μ F 20% 50V
C450	1-126-963-11	ELECT	4.7 μ F 20% 50V
C451	1-126-963-11	ELECT	4.7 μ F 20% 50V
C475	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V

CONNECTOR

CN402	1-691-765-11	PLUG (MICRO CONNECTOR) 3P
CN450	1-573-301-21	CONNECTOR, BOARD TO BOARD 20P

IC

IC404	8-759-658-01	IC NJW1130G-TE2
-------	--------------	-----------------

CHIP CONDUCTOR

JR403	1-216-295-91	SHORT
JR404	1-216-295-91	SHORT
JR407	1-216-295-91	SHORT
JR408	1-216-295-91	SHORT
JR420	1-216-295-91	SHORT
JR421	1-216-295-91	SHORT
JR422	1-216-295-91	SHORT
JR423	1-216-295-91	SHORT
JR426	1-216-295-91	SHORT
JR427	1-216-295-91	SHORT
JR428	1-216-295-91	SHORT
JR429	1-216-295-91	SHORT
JR452	1-216-295-91	SHORT
JR474	1-216-295-91	SHORT
JR477	1-216-295-91	SHORT

COIL

L410	1-414-271-11	INDUCTOR	47 μ H
------	--------------	----------	------------

REF.NO.	PART NO.	DESCRIPTION	REMARK
RESISTOR			
R219	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R220	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R403	1-216-025-91	RES-CHIP	100 5% 1/10W
R404	1-216-025-91	RES-CHIP	100 5% 1/10W
R405	1-216-025-91	RES-CHIP	100 5% 1/10W
R406	1-216-025-91	RES-CHIP	100 5% 1/10W
R407	1-216-025-91	RES-CHIP	100 5% 1/10W
R408	1-216-025-91	RES-CHIP	100 5% 1/10W
R409	1-216-025-91	RES-CHIP	100 5% 1/10W
R410	1-216-025-91	RES-CHIP	100 5% 1/10W
R450	1-216-025-91	RES-CHIP	100 5% 1/10W
R451	1-216-025-91	RES-CHIP	100 5% 1/10W
R455	1-216-025-91	RES-CHIP	100 5% 1/10W
R456	1-216-025-91	RES-CHIP	100 5% 1/10W
R477	1-216-113-00	RES-CHIP	470K 5% 1/10W
R478	1-216-113-00	RES-CHIP	470K 5% 1/10W
R479	1-216-113-00	RES-CHIP	470K 5% 1/10W
R480	1-216-113-00	RES-CHIP	470K 5% 1/10W



- * A-1304-198-A MA (VAR) MOUNTED PC BOARD (KV-27FS16 ONLY)
- * A-1304-200-A MA (VAR) MOUNTED PC BOARD (KV-27FS12/29FS12/29FS12C)

CAPACITOR

C003	1-126-959-11	ELECT	0.47 μ F 20% 50V
C005	1-164-005-11	CERAMIC CHIP	0.47 μ F 25V
C005	1-164-005-11	CERAMIC CHIP (KV-27FS16 ONLY)	0.47 μ F 25V
C006	1-126-964-11	ELECT	10 μ F 20% 50V
C009	1-163-259-91	CERAMIC CHIP	220PF 5% 50V
C010	1-163-035-00	CERAMIC CHIP	0.047 μ F 50V
C011	1-163-259-91	CERAMIC CHIP	220PF 5% 50V
C012	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V
C015	1-163-231-11	CERAMIC CHIP	15PF 5% 50V
C016	1-163-231-11	CERAMIC CHIP	15PF 5% 50V
C017	1-126-960-11	ELECT	1 μ F 20% 50V
C019	1-163-259-91	CERAMIC CHIP	220PF 5% 50V
C020	1-163-038-91	CERAMIC CHIP	0.1 μ F 25V
C021	1-163-259-91	CERAMIC CHIP	220PF 5% 50V
C022	1-163-135-00	CERAMIC CHIP	560PF 5% 50V
C027	1-163-009-11	CERAMIC CHIP	0.001 μ F 10% 50V
C028	1-163-259-91	CERAMIC CHIP	220PF 5% 50V
C032	1-164-004-11	CERAMIC CHIP	0.1 μ F 10% 25V
C033	1-163-259-91	CERAMIC CHIP	220PF 5% 50V

MA

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
C034	1-163-037-11	CERAMIC CHIP	0.022 μ F	10%	50V	C316	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C037	1-164-161-11	CERAMIC CHIP	0.0022 μ F	10%	50V	C317	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C038	1-126-935-11	ELECT	470 μ F	20%	16V	C318	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C039	1-126-964-11	ELECT	10 μ F	20%	50V	C319	1-126-767-11	ELECT	1000 μ F	20%	16V
C040	1-163-229-11	CERAMIC CHIP	12PF	5%	50V						
C041	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	C320	1-164-005-11	CERAMIC CHIP	0.47 μ F		25V
C042	1-163-259-91	CERAMIC CHIP	220PF	5%	50V	C321	1-164-005-11	CERAMIC CHIP	0.47 μ F		25V
C043	1-163-009-11	CERAMIC CHIP	0.001 μ F	10%	50V	C322	1-164-005-11	CERAMIC CHIP	0.47 μ F		25V
C044	1-163-009-11	CERAMIC CHIP	0.001 μ F	10%	50V	C323	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C045	1-164-161-11	CERAMIC CHIP	0.0022 μ F	10%	50V	C324	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C046	1-104-664-11	ELECT	47 μ F	20%	25V	C325	1-164-005-11	CERAMIC CHIP	0.47 μ F		25V
C047	1-163-259-91	CERAMIC CHIP	220PF	5%	50V	C326	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C048	1-163-259-91	CERAMIC CHIP	220PF	5%	50V	C328	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C051	1-126-935-11	ELECT	470 μ F	20%	16V	C329	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C060	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	C330	1-126-960-11	ELECT	1 μ F	20%	50V
C062	1-126-959-11	ELECT	0.47 μ F	20%	50V	C331	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C063	1-137-194-81	MYLAR	0.47 μ F	5%	50V	C332	1-163-010-11	CERAMIC CHIP	0.0012 μ F	10%	50V
C064	1-163-017-00	CERAMIC CHIP	0.0047 μ F	10%	50V	C334	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C070	1-163-009-11	CERAMIC CHIP	0.001 μ F	10%	50V	C335	1-126-963-11	ELECT	4.7 μ F	20%	50V
C071	1-163-009-11	CERAMIC CHIP	0.001 μ F	10%	50V	C336	1-104-664-11	ELECT	47 μ F	20%	25V
C076	1-163-259-91	CERAMIC CHIP	220PF	5%	50V	C338	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C077	1-163-259-91	CERAMIC CHIP	220PF	5%	50V	C339	1-126-960-11	ELECT	1 μ F	20%	50V
C091	1-163-037-11	CERAMIC CHIP	0.022 μ F	10%	50V	C340	1-126-933-11	ELECT	100 μ F	20%	16V
C093	1-163-259-91	CERAMIC CHIP	220PF	5%	50V	C341	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C097	1-163-009-11	CERAMIC CHIP	0.001 μ F	10%	50V	C345	1-163-021-91	CERAMIC CHIP (KV-27FS16 ONLY)	0.01 μ F	10%	50V
C099	1-126-960-11	ELECT	1 μ F	20%	50V	C346	1-163-021-91	CERAMIC CHIP (KV-27FS16 ONLY)	0.01 μ F	10%	50V
C151	1-126-960-11	ELECT (KV-27FS16 ONLY)	1 μ F	20%	50V	C347	1-163-021-91	CERAMIC CHIP (KV-27FS16 ONLY)	0.01 μ F	10%	50V
C153	1-163-017-00	CERAMIC CHIP (KV-27FS16 ONLY)	0.0047 μ F	10%	50V	C348	1-164-005-11	CERAMIC CHIP	0.47 μ F		25V
C154	1-126-967-11	ELECT (KV-27FS16 ONLY)	47 μ F	20%	50V	C350	1-126-959-11	ELECT	0.47 μ F	20%	50V
C155	1-126-964-11	ELECT (KV-27FS16 ONLY)	10 μ F	20%	50V	C351	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C156	1-104-664-11	ELECT (KV-27FS16 ONLY)	47 μ F	20%	25V	C352	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C157	1-126-968-11	ELECT (KV-27FS16 ONLY)	100 μ F	20%	50V	C353	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C302	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	C354	1-126-933-11	ELECT	100 μ F	20%	16V
C303	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	C355	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C304	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	C356	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C305	1-126-933-11	ELECT	100 μ F	20%	16V	C357	1-104-664-11	ELECT	47 μ F	20%	25V
C307	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V	C358	1-104-664-11	ELECT	47 μ F	20%	25V
C308	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	C359	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C309	1-126-933-11	ELECT	100 μ F	20%	16V	C360	1-126-959-11	ELECT	0.47 μ F	20%	50V
C310	1-126-960-11	ELECT	1 μ F	20%	50V	C361	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
C311	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	C362	1-104-664-11	ELECT	47 μ F	20%	25V
C313	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	C363	1-163-038-91	CERAMIC CHIP	0.1 μ F		25V
C314	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	C364	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V
C315	1-104-664-11	ELECT	47 μ F	20%	25V	C365	1-137-194-81	MYLAR	0.47 μ F	5%	50V
						C366	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V
						C367	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
						C368	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MA

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK
C369	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	FERRITE BEAD			
C370	1-126-933-11	ELECT	100 μ F	20%	16V	FB001	1-414-234-22	INDUCTOR CHIP	0 μ H
C371	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	FB002	1-414-234-22	INDUCTOR CHIP	0 μ H
C377	1-126-963-11	ELECT	4.7 μ F	20%	50V	FB301	1-412-911-11	FERRITE	0 μ H
C389	1-115-185-11	CERAMIC CHIP	0.033 μ F	10%	50V	FB302	1-412-911-11	FERRITE	0 μ H
C390	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	FILTER			
C391	1-126-933-11	ELECT	100 μ F	20%	16V	FL301	1-239-847-11	FILTER, LOW PASS	
C395	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	FL302	1-239-847-11	FILTER, LOW PASS	
C396	1-164-004-11	CERAMIC CHIP	0.1 μ F	10%	25V	FL303	1-239-847-11	FILTER, LOW PASS	
C397	1-163-021-91	CERAMIC CHIP	0.01 μ F	10%	50V	IC			
C398	1-126-964-11	ELECT	10 μ F	20%	50V	IC001	8-759-658-00	IC M37280MK-110SP	
C451	1-164-346-11	CERAMIC CHIP (KV-27FS16 ONLY)	1 μ F		16V	IC002	8-759-663-29	IC MM1476AF(TP)	
C452	1-164-346-11	CERAMIC CHIP (KV-27FS16 ONLY)	1 μ F		16V	IC003	8-759-527-77	IC M24C16-MN6T	
C453	1-164-346-11	CERAMIC CHIP (KV-27FS16 ONLY)	1 μ F		16V	IC301 \triangle	8-752-094-98	IC CXA2154S	
C454	1-164-346-11	CERAMIC CHIP (KV-27FS16 ONLY)	1 μ F		16V	IC302	8-759-655-75	IC TC90A49P	
CONNECTOR						CHIP CONDUCTOR			
CN001 *	1-564-511-11	PLUG, CONNECTOR 8P				JR001	1-216-295-91	SHORT	
CN002 *	1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P				JR002	1-216-295-91	SHORT	
CN003 *	1-564-512-11	PLUG, CONNECTOR 9P				JR003	1-216-295-91	SHORT	
CN004 *	1-564-512-11	PLUG, CONNECTOR 9P				JR005	1-216-295-91	SHORT	
CN005 *	1-764-333-11	PLUG, CONNECTOR 10P				JR006	1-216-295-91	SHORT	
CN006 *	1-764-333-11	PLUG, CONNECTOR 10P				JR007	1-216-295-91	SHORT	
CN302 *	1-564-507-11	PLUG, CONNECTOR 4P				JR008	1-216-295-91	SHORT	
CN303	1-900-805-12	CONNECTOR ASSY 9P BOARD				JR010	1-216-295-91	SHORT	
CN304 *	1-564-507-11	PLUG, CONNECTOR 4P (KV-27FS16 ONLY)				JR011	1-216-295-91	SHORT	
CN305	1-573-298-21	CONNECTOR, BOARD TO BOARD 20P (KV-27FS16 ONLY)				JR090	1-216-295-91	SHORT	
CN309 *	1-564-506-11	PLUG, CONNECTOR 3P				JR100	1-216-295-91	SHORT	
CN401 *	1-564-505-11	PLUG, CONNECTOR 2P (KV-27FS16 ONLY)				JR296	1-216-295-91	SHORT	
DIODE						JR297	1-216-295-91	SHORT	
D001	8-719-976-99	DIODE UDZ-TE-17-5.1B				JR298	1-216-295-91	SHORT	
D002	8-719-110-17	DIODE MTZJ-T-77-10B				JR299	1-216-295-91	SHORT	
D003	8-719-073-01	DIODE MA111-TX				JR350	1-216-295-91	SHORT	
D004	8-719-976-99	DIODE UDZ-TE-17-5.1B				JR378	1-216-295-91	SHORT	
D005	8-719-109-89	DIODE MTZJ-T-77-5.6C				JR379	1-216-295-91	SHORT	
D006	8-719-977-22	DIODE UDZ-TE-17-9.1B				JR399	1-216-295-91	SHORT	
D075	8-719-073-01	DIODE MA111-TX				JR401	1-216-295-91	SHORT	
D301	8-719-921-44	DIODE MTZJ-T-77-5.1C				COIL			
D303	8-719-991-33	DIODE 1SS133T-77 (KV-27FS16 ONLY)				L002	1-414-273-11	INDUCTOR	100 μ H
D305	8-719-921-44	DIODE MTZJ-T-77-5.1C				L003	1-414-273-11	INDUCTOR	100 μ H
D360	8-719-914-44	DIODE DAP202K-T-146				L040	1-408-963-11	INDUCTOR	2.7 μ H
						L150	1-414-267-11	INDUCTOR (KV-27FS16 ONLY)	10 μ H
						L151	1-414-273-11	INDUCTOR (KV-27FS16 ONLY)	100 μ H

MA

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
L301	1-414-267-11	INDUCTOR	10 μ H	RESISTOR			
L302	1-414-271-11	INDUCTOR	47 μ H	R001	1-216-043-91	RES-CHIP	560 5% 1/10W
L303	1-414-856-11	INDUCTOR	10 μ H	R002	1-216-041-00	RES-CHIP	470 5% 1/10W
L304	1-414-856-11	INDUCTOR	10 μ H	R003	1-247-807-31	CARBON	100 5% 1/4W
L305	1-414-267-11	INDUCTOR	10 μ H	R004	1-216-061-00	RES-CHIP	3.3K 5% 1/10W
L308	1-414-273-11	INDUCTOR	100 μ H	R005	1-216-295-91	SHORT	
L310	1-414-273-11	INDUCTOR	100 μ H	R006	1-216-025-91	RES-CHIP	100 5% 1/10W
L350	1-414-856-11	INDUCTOR	10 μ H	R007	1-216-025-91	RES-CHIP	100 5% 1/10W
L351	1-414-856-11	INDUCTOR	10 μ H	R008	1-216-049-91	RES-CHIP	1K 5% 1/10W
TRANSISTOR				R009	1-216-121-91	RES-CHIP	1M 5% 1/10W
Q001	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R010	1-216-033-00	RES-CHIP	220 5% 1/10W
Q002	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R011	1-216-033-00	RES-CHIP	220 5% 1/10W
Q003	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R012	1-216-045-00	RES-CHIP	680 5% 1/10W
Q004	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R013	1-249-417-11	CARBON	1K 5% 1/4W
Q006	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R014	1-216-073-00	RES-CHIP	10K 5% 1/10W
Q082	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R015	1-216-073-00	RES-CHIP	10K 5% 1/10W
Q151	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R016	1-216-041-00	RES-CHIP	470 5% 1/10W
Q152	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-27FS16 ONLY)		R017	1-208-798-11	METAL CHIP	4.7K 0.50% 1/10W
Q302	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R018	1-247-815-91	CARBON	220 5% 1/4W
Q303	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R019	1-216-113-00	RES-CHIP	470K 5% 1/10W
Q305	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R020	1-216-033-00	RES-CHIP	220 5% 1/10W
Q310	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R021	1-249-429-11	CARBON	10K 5% 1/4W
Q349	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R022	1-247-815-91	CARBON	220 5% 1/4W
Q350	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R023	1-249-429-11	CARBON	10K 5% 1/4W
Q351	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R024	1-247-815-91	CARBON	220 5% 1/4W
Q352	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R025	1-249-426-11	CARBON	5.6K 5% 1/4W
Q354	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R026	1-249-426-11	CARBON	5.6K 5% 1/4W
Q355	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R027	1-249-426-11	CARBON	5.6K 5% 1/4W
Q356	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R028	1-216-049-91	RES-CHIP	1K 5% 1/10W
Q358	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R029	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q359	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R030	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
Q365	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R031	1-216-355-11	METAL OXIDE	3.3 5% 1W
Q368	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R032	1-216-033-00	RES-CHIP	220 5% 1/10W
Q369	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R033	1-216-033-00	RES-CHIP	220 5% 1/10W
Q370	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R034	1-216-033-00	RES-CHIP	220 5% 1/10W
Q375	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX		R035	1-216-033-00	RES-CHIP	220 5% 1/10W
Q378	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FS16 ONLY)		R036	1-216-049-91	RES-CHIP	1K 5% 1/10W
Q379	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA (KV-27FS16 ONLY)		R037	1-247-815-91	CARBON	220 5% 1/4W
Q380	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FS16 ONLY)		R038	1-216-049-91	RES-CHIP	1K 5% 1/10W
Q387	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R039	1-216-045-00	RES-CHIP	680 5% 1/10W
Q388	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R040	1-247-815-91	CARBON	220 5% 1/4W
Q389	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX		R041	1-216-045-00	RES-CHIP	680 5% 1/10W
				R042	1-216-071-00	RES-CHIP	8.2K 5% 1/10W
				R043	1-249-417-11	CARBON	1K 5% 1/4W
				R044	1-216-033-00	RES-CHIP	220 5% 1/10W
				R045	1-216-065-91	RES-CHIP	4.7K 5% 1/10W

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MA

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
R046	1-216-033-00	RES-CHIP	220	5%	1/10W	R256	1-216-073-00	RES-CHIP	10K	5%	1/10W
R047	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R257	1-216-049-91	RES-CHIP	1K	5%	1/10W
R048	1-216-025-91	RES-CHIP (KV-27FS16 ONLY)	100	5%	1/10W	R258	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R050	1-216-033-00	RES-CHIP	220	5%	1/10W	R259	1-249-429-11	CARBON	10K	5%	1/4W
R051	1-216-033-00	RES-CHIP	220	5%	1/10W	R260	1-247-815-91	CARBON	220	5%	1/4W
R052	1-249-417-11	CARBON	1K	5%	1/4W	R261	1-216-113-00	RES-CHIP	470K	5%	1/10W
R054	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R262	1-247-807-31	CARBON	100	5%	1/4W
R055	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R263	1-216-025-91	RES-CHIP	100	5%	1/10W
R056	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W	R264	1-216-081-00	RES-CHIP (KV-27FS16 ONLY)	22K	5%	1/10W
R057	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R266	1-216-081-00	RES-CHIP (KV-27FS16 ONLY)	22K	5%	1/10W
R058	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R267	1-216-049-91	RES-CHIP	1K	5%	1/10W
R060	1-247-815-91	CARBON	220	5%	1/4W	R268	1-216-045-00	RES-CHIP	680	5%	1/10W
R061	1-216-033-00	RES-CHIP	220	5%	1/10W	R269	1-216-049-91	RES-CHIP	1K	5%	1/10W
R064	1-216-295-91	SHORT				R270	1-216-081-00	RES-CHIP (KV-27FS16 ONLY)	22K	5%	1/10W
R069	1-247-815-91	CARBON (KV-27FS16 ONLY)	220	5%	1/4W	R271	1-216-081-00	RES-CHIP (KV-27FS16 ONLY)	22K	5%	1/10W
R070	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R272	1-216-081-00	RES-CHIP (KV-27FS16 ONLY)	22K	5%	1/10W
R071	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R273	1-216-073-00	RES-CHIP	10K	5%	1/10W
R073	1-249-425-11	CARBON	4.7K	5%	1/4W	R274	1-216-295-91	SHORT			
R074	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R275	1-216-081-00	RES-CHIP	22K	5%	1/10W
R077	1-216-097-91	RES-CHIP	100K	5%	1/10W	R276	1-216-085-00	RES-CHIP	33K	5%	1/10W
R086	1-216-045-00	RES-CHIP	680	5%	1/10W	R277	1-216-129-00	RES-CHIP	2.2M	5%	1/10W
R087	1-216-045-00	RES-CHIP	680	5%	1/10W	R278	1-216-295-91	SHORT			
R088	1-216-045-00	RES-CHIP	680	5%	1/10W	R279	1-247-807-31	CARBON	100	5%	1/4W
R091	1-216-073-00	RES-CHIP	10K	5%	1/10W	R280	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R092	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W	R281	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R093	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R282	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R094	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R283	1-216-689-11	RES-CHIP	39K	5%	1/10W
R095	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R300	1-216-295-91	SHORT			
R096	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R301	1-216-022-00	RES-CHIP	75	5%	1/10W
R097	1-249-414-11	CARBON	560	5%	1/4W	R303	1-216-073-00	RES-CHIP	10K	5%	1/10W
R099	1-216-089-91	RES-CHIP	47K	5%	1/10W	R304	1-247-807-31	CARBON	100	5%	1/4W
R150	1-216-053-00	RES-CHIP (KV-27FS16 ONLY)	1.5K	5%	1/10W	R305	1-216-295-91	SHORT			
R151	1-216-025-91	RES-CHIP (KV-27FS16 ONLY)	100	5%	1/10W	R306	1-216-025-91	RES-CHIP	100	5%	1/10W
R154	1-216-043-91	RES-CHIP (KV-27FS16 ONLY)	560	5%	1/10W	R307	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R155	1-216-043-91	RES-CHIP (KV-27FS16 ONLY)	560	5%	1/10W	R308	1-216-022-00	RES-CHIP	75	5%	1/10W
R156	1-216-085-00	RES-CHIP (KV-27FS16 ONLY)	33K	5%	1/10W	R309	1-216-022-00	RES-CHIP	75	5%	1/10W
R157	1-216-081-00	RES-CHIP (KV-27FS16 ONLY)	22K	5%	1/10W	R310	1-249-417-11	CARBON	1K	5%	1/4W
R158	1-216-025-91	RES-CHIP (KV-27FS16 ONLY)	100	5%	1/10W	R311	1-216-025-91	RES-CHIP	100	5%	1/10W
R159	1-216-025-91	RES-CHIP (KV-27FS16 ONLY)	100	5%	1/10W	R312	1-249-417-11	CARBON	1K	5%	1/4W
R251	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R313	1-216-049-91	RES-CHIP	1K	5%	1/10W
R253	1-216-049-91	RES-CHIP	1K	5%	1/10W	R314	1-216-081-00	RES-CHIP (KV-27FS16 ONLY)	22K	5%	1/10W
						R315	1-216-022-00	RES-CHIP	75	5%	1/10W
						R316	1-216-067-00	RES-CHIP	5.6K	5%	1/10W

**Note:**

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
R317	1-247-807-31	CARBON	100	5%	1/4W	R369	1-216-033-00	RES-CHIP	220	5%	1/10W
R318	1-216-091-00	RES-CHIP	56K	5%	1/10W	R370	1-249-429-11	CARBON	10K	5%	1/4W
R319	1-216-081-00	RES-CHIP	22K	5%	1/10W	R372	1-216-043-91	RES-CHIP	560	5%	1/10W
R320	1-216-025-91	RES-CHIP	100	5%	1/10W	R373	1-216-025-91	RES-CHIP	100	5%	1/10W
R321	1-216-043-91	RES-CHIP	560	5%	1/10W	R374	1-216-025-91	RES-CHIP	100	5%	1/10W
R322	1-216-025-91	RES-CHIP	100	5%	1/10W	R375	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R323	1-216-025-91	RES-CHIP	100	5%	1/10W	R376	1-216-022-00	RES-CHIP	75	5%	1/10W
R324	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R377	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R325	1-249-417-11	CARBON	1K	5%	1/4W	R378	1-216-295-91	SHORT			
R326	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	R379	1-216-049-91	RES-CHIP	1K	5%	1/10W
R327	1-216-025-91	RES-CHIP	100	5%	1/10W	R382	1-216-295-91	SHORT			
R328	1-216-025-91	RES-CHIP	100	5%	1/10W	R383	1-216-295-91	SHORT			
R329	1-216-025-91	RES-CHIP	100	5%	1/10W	R384	1-216-295-91	SHORT			
R331	1-216-049-91	RES-CHIP	1K	5%	1/10W	R386	1-216-047-91	RES-CHIP	820	5%	1/10W
R332	1-216-022-00	RES-CHIP	75	5%	1/10W	R387	1-216-025-91	RES-CHIP	100	5%	1/10W
R333	1-216-067-00	RES-CHIP	5.6K	5%	1/10W	R388	1-216-025-91	RES-CHIP	100	5%	1/10W
R334	1-216-025-91	RES-CHIP	100	5%	1/10W	R389	1-216-049-91	RES-CHIP	1K	5%	1/10W
R335	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R392	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R336	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R394	1-216-043-91	RES-CHIP	560	5%	1/10W
R337	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R395	1-216-043-91	RES-CHIP	560	5%	1/10W
R338	1-216-073-00	RES-CHIP	10K	5%	1/10W	R396	1-247-807-31	CARBON	100	5%	1/4W
R339	1-216-091-00	RES-CHIP	56K	5%	1/10W	R398	1-216-091-00	RES-CHIP	56K	5%	1/10W
R340	1-216-025-91	RES-CHIP	100	5%	1/10W	R399	1-216-109-00	RES-CHIP	330K	5%	1/10W
R341	1-216-089-91	RES-CHIP	47K	5%	1/10W	R434	1-216-065-91	RES-CHIP (KV-27FS16 ONLY)	4.7K	5%	1/10W
R342	1-216-049-91	RES-CHIP	1K	5%	1/10W	R435	1-216-065-91	RES-CHIP (KV-27FS16 ONLY)	4.7K	5%	1/10W
R343	1-216-097-91	RES-CHIP	100K	5%	1/10W						
R344	1-216-295-91	SHORT									
R345	1-216-097-91	RES-CHIP	100K	5%	1/10W						
R346	1-216-097-91	RES-CHIP	100K	5%	1/10W						
R347	1-216-025-91	RES-CHIP	100	5%	1/10W						
R349	1-216-025-91	RES-CHIP	100	5%	1/10W						
R351	1-216-041-00	RES-CHIP	470	5%	1/10W						
R352	1-247-807-31	CARBON	100	5%	1/4W						
R353	1-247-807-31	CARBON	100	5%	1/4W						
R354	1-216-025-91	RES-CHIP	100	5%	1/10W						
R355	1-216-053-00	RES-CHIP	1.5K	5%	1/10W						
R356	1-216-025-91	RES-CHIP	100	5%	1/10W						
R357	1-216-022-00	RES-CHIP	75	5%	1/10W						
R358	1-216-093-91	RES-CHIP	68K	5%	1/10W						
R359	1-216-057-00	RES-CHIP	2.2K	5%	1/10W						
R360	1-216-093-91	RES-CHIP	68K	5%	1/10W						
R361	1-216-022-00	RES-CHIP	75	5%	1/10W						
R362	1-216-035-00	RES-CHIP	270	5%	1/10W						
R363	1-216-039-00	RES-CHIP	390	5%	1/10W						
R364	1-216-025-91	RES-CHIP	100	5%	1/10W						
R365	1-216-025-91	RES-CHIP	100	5%	1/10W						
R366	1-216-053-00	RES-CHIP	1.5K	5%	1/10W						
R367	1-216-057-00	RES-CHIP	2.2K	5%	1/10W						
R368	1-216-043-91	RES-CHIP	560	5%	1/10W						

TUNER

TU150 \triangle 8-598-501-00 TUNER, FSS BTF-FA402
(KV-27FS16 ONLY)

CRYSTAL

X001 1-767-487-11 VIBRATOR, CRYSTAL
X301 1-567-505-11 OSCILLATOR, CRYSTAL



* A-1190-367-A P MOUNTED PC BOARD (KV-27FS16)

CAPACITOR

C3301	1-163-031-11	CERAMIC CHIP	0.01 μ F	50V
C3302	1-163-031-11	CERAMIC CHIP	0.01 μ F	50V
C3303	1-104-664-11	ELECT	47 μ F	20% 16V
C3304	1-163-031-11	CERAMIC CHIP	0.01 μ F	50V
C3305	1-163-031-11	CERAMIC CHIP	0.01 μ F	50V
C3306	1-163-038-91	CERAMIC CHIP	0.1 μ F	25V

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

P

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
C3308	1-164-005-11	CERAMIC CHIP	0.47μF		25V	DIODE					
C3309	1-163-034-00	CERAMIC CHIP	0.033μF		50V	D3301	8-719-073-01	DIODE MA111-TX			
C3310	1-164-222-11	CERAMIC CHIP	0.22μF		25V	D3304	8-719-422-12	DIODE UDZ-TE-17-3.9B			
C3311	1-163-233-11	CERAMIC CHIP	18PF	5%	50V						
C3314	1-163-031-11	CERAMIC CHIP	0.01μF		50V						
C3315	1-163-031-11	CERAMIC CHIP	0.01μF		50V	IC					
C3316	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	IC3300	8-759-353-00	IC NJM2534M(TE2)			
C3317	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	IC3301	8-759-660-74	IC M65664FP-DS60S			
C3319	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	IC3302	8-759-458-18	IC TDA8501T			
C3320	1-164-005-11	CERAMIC CHIP	0.47μF		25V						
C3321	1-163-009-11	CERAMIC CHIP	0.001μF	10%	50V						
C3323	1-104-664-11	ELECT	47μF	20%	16V	COIL					
C3324	1-163-031-11	CERAMIC CHIP	0.01μF		50V	L3300	1-414-267-11	INDUCTOR		10μH	
C3325	1-163-031-11	CERAMIC CHIP	0.01μF		50V	L3301	1-410-682-31	INDUCTOR		470μH	
C3326	1-104-664-11	ELECT	47μF	20%	16V	L3302	1-414-267-11	INDUCTOR		10μH	
C3327	1-104-664-11	ELECT	47μF	20%	16V	L3303	1-414-267-11	INDUCTOR		10μH	
C3328	1-104-664-11	ELECT	47μF	20%	16V	L3304	1-414-267-11	INDUCTOR		10μH	
C3330	1-126-964-11	ELECT	10μF	20%	50V						
C3331	1-163-009-11	CERAMIC CHIP	0.001μF	10%	50V	TRANSISTOR					
C3332	1-164-346-11	CERAMIC CHIP	1μF		16V	Q3300	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3333	1-164-346-11	CERAMIC CHIP	1μF		16V	Q3301	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3334	1-164-005-11	CERAMIC CHIP	0.47μF		25V	Q3302	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3335	1-163-009-11	CERAMIC CHIP	0.001μF	10%	50V	Q3304	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3336	1-163-031-11	CERAMIC CHIP	0.01μF		50V	Q3305	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3339	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	Q3306	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3340	1-126-967-11	ELECT	47μF	20%	50V	Q3308	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3341	1-164-222-11	CERAMIC CHIP	0.22μF		25V	Q3309	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3342	1-163-037-11	CERAMIC CHIP	0.022μF	10%	50V	Q3311	8-729-111-55	TRANSISTOR 2SD1292			
C3343	1-126-967-11	ELECT	47μF	20%	50V	Q3312	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3344	1-164-222-11	CERAMIC CHIP	0.22μF		25V	Q3313	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3345	1-164-346-11	CERAMIC CHIP	1μF		16V	Q3314	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3346	1-164-346-11	CERAMIC CHIP	1μF		16V	Q3315	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3347	1-164-346-11	CERAMIC CHIP	1μF		16V	Q3316	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3349	1-164-005-11	CERAMIC CHIP	0.47μF		25V	Q3317	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3350	1-163-233-11	CERAMIC CHIP	18PF	5%	50V	Q3318	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3351	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	Q3319	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3352	1-164-222-11	CERAMIC CHIP	0.22μF		25V	Q3320	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3353	1-126-967-11	ELECT	47μF	20%	50V	Q3321	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
C3354	1-163-037-11	CERAMIC CHIP	0.022μF	10%	50V	Q3323	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
C3355	1-164-346-11	CERAMIC CHIP	1μF		16V						
C3356	1-164-346-11	CERAMIC CHIP	1μF		16V						
C3357	1-164-346-11	CERAMIC CHIP	1μF		16V						
CONNECTOR											
CN3300	1-573-301-21	CONNECTOR, BOARD TO BOARD 20P				R3300	1-216-041-00	RES-CHIP	470	5%	1/10W
						R3303	1-216-073-00	RES-CHIP	10K	5%	1/10W
						R3304	1-216-133-00	RES-CHIP	3.3M	5%	1/10W
						R3305	1-216-037-00	RES-CHIP	330	5%	1/10W
						R3308	1-216-085-00	RES-CHIP	33K	5%	1/10W
						R3309	1-216-025-91	RES-CHIP	100	5%	1/10W
						R3310	1-216-025-91	RES-CHIP	100	5%	1/10W

**Note:**

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
R3311	1-216-037-00	RES-CHIP	330	5%	1/10W	R3376	1-216-025-91	RES-CHIP	100	5%	1/10W
R3312	1-216-043-91	RES-CHIP	560	5%	1/10W	R3377	1-216-041-00	RES-CHIP	470	5%	1/10W
R3313	1-216-035-00	RES-CHIP	270	5%	1/10W	R3378	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3316	1-216-295-91	SHORT				R3379	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3317	1-216-295-91	SHORT				R3380	1-216-043-91	RES-CHIP	560	5%	1/10W
R3318	1-216-061-00	RES-CHIP	3.3K	5%	1/10W	R3381	1-216-041-00	RES-CHIP	470	5%	1/10W
R3319	1-216-295-91	SHORT				R3382	1-216-043-91	RES-CHIP	560	5%	1/10W
R3320	1-216-073-00	RES-CHIP	10K	5%	1/10W	R3383	1-216-041-00	RES-CHIP	470	5%	1/10W
R3321	1-216-049-91	RES-CHIP	1K	5%	1/10W	R3384	1-216-045-00	RES-CHIP	680	5%	1/10W
R3322	1-216-091-00	RES-CHIP	56K	5%	1/10W	R3385	1-216-043-91	RES-CHIP	560	5%	1/10W
R3323	1-216-049-91	RES-CHIP	1K	5%	1/10W	R3386	1-216-041-00	RES-CHIP	470	5%	1/10W
R3324	1-216-033-00	RES-CHIP	220	5%	1/10W	R3387	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3325	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R3388	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3328	1-216-295-91	SHORT				R3392	1-208-834-11	METAL CHIP	150K	0.5%	1/10W
R3329	1-216-033-00	RES-CHIP	220	5%	1/10W	R3393	1-216-295-91	SHORT			
R3333	1-216-049-91	RES-CHIP	1K	5%	1/10W	R3395	1-216-689-11	RES-CHIP	39K	5%	1/10W
R3334	1-216-049-91	RES-CHIP	1K	5%	1/10W	R3396	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3335	1-216-049-91	RES-CHIP	1K	5%	1/10W	R3397	1-216-025-91	RES-CHIP	100	5%	1/10W
R3336	1-216-295-91	SHORT				R3398	1-216-047-91	RES-CHIP	820	5%	1/10W
R3338	1-216-295-91	SHORT				R3399	1-216-045-00	RES-CHIP	680	5%	1/10W
R3340	1-216-295-91	SHORT				R3400	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3341	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R3401	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3342	1-216-295-91	SHORT				R3402	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3343	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R3403	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3344	1-216-073-00	RES-CHIP	10K	5%	1/10W	R3404	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3345	1-216-073-00	RES-CHIP	10K	5%	1/10W	R3405	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3346	1-216-045-00	RES-CHIP	680	5%	1/10W						
R3347	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3349	1-215-857-11	METAL OXIDE	10	5%	1W						
R3350	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3351	1-216-041-00	RES-CHIP	470	5%	1/10W						
R3355	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3356	1-216-113-00	RES-CHIP	470K	5%	1/10W						
R3357	1-216-041-00	RES-CHIP	470	5%	1/10W						
R3358	1-216-689-11	RES-CHIP	39K	5%	1/10W						
R3359	1-216-113-00	RES-CHIP	470K	5%	1/10W						
R3360	1-216-051-00	RES-CHIP	1.2K	5%	1/10W						
R3361	1-216-045-00	RES-CHIP	680	5%	1/10W						
R3365	1-216-073-00	RES-CHIP	10K	5%	1/10W						
R3366	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3367	1-216-073-00	RES-CHIP	10K	5%	1/10W						
R3368	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3369	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3370	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3371	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3372	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3373	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R3374	1-216-025-91	RES-CHIP	100	5%	1/10W						
R3375	1-216-025-91	RES-CHIP	100	5%	1/10W						

CRYSTAL

X3300	1-567-505-11	OSCILLATOR, CRYSTAL
X3301	1-781-377-11	VIBRATOR, CRYSTAL



* A-1342-550-A VA (VAR) MOUNTED PC BOARD

4-382-854-11 SCREW (M3X10), P, SW (+)

CAPACITOR

C805	1-129-763-00	FILM	0.033 μ F	5%	200V
C811	1-129-765-00	FILM	0.047 μ F	5%	200V
C901	1-107-667-11	ELECT	2.2 μ F	20%	160V
C902	1-130-491-00	MYLAR	0.047 μ F	5%	50V
C903	1-126-925-11	ELECT	470 μ F	20%	10V
C904	1-130-471-00	MYLAR	0.001 μ F	5%	50V
C905	1-106-383-00	MYLAR	0.047 μ F	10%	200V
C906	1-130-471-00	MYLAR	0.001 μ F	5%	50V
C907	1-107-638-11	ELECT	33 μ F	20%	160V

Note:

The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par un trame et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF.NO.	PART NO.	DESCRIPTION	REMARK			REF.NO.	PART NO.	DESCRIPTION	REMARK		
C908	1-126-925-11	ELECT	470 μ F	20%	10V	R906	1-249-432-11	CARBON	18K	5%	1/4W
C909	1-161-830-00	CERAMIC	0.0047 μ F		500V	R907	1-249-386-11	CARBON	2.7	5%	1/4W
C910	1-104-999-11	MYLAR	0.1 μ F	10%	200V	R908	1-249-414-11	CARBON	560	5%	1/4W
C911	1-104-665-11	ELECT	100 μ F	20%	10V	R909	1-260-312-11	CARBON	47	5%	1/2W
C912	1-126-941-11	ELECT	470 μ F	20%	25V	R910	1-216-476-11	METAL OXIDE	180	5%	3W
C913	1-102-074-00	CERAMIC	0.001 μ F	10%	50V						
C914	1-130-491-00	MYLAR	0.047 μ F	5%	50V	R911	1-249-403-11	CARBON	68	5%	1/4W
CONNECTOR						R912	1-247-815-91	CARBON	220	5%	1/4W
CN901 *	1-564-508-11	PLUG, CONNECTOR 5P				R913	1-249-403-11	CARBON	68	5%	1/4W
CN902 *	1-770-723-11	CONNECTOR, BOARD TO BOARD 8P				R914	1-249-410-11	CARBON	270	5%	1/4W
CN904 *	1-564-507-11	PLUG, CONNECTOR 4P				R915	1-249-417-11	CARBON	1K	5%	1/4W
DIODE						R916	1-249-417-11	CARBON	1K	5%	1/4W
D804	8-719-302-43	DIODE RGP10GPKG23				R917	1-249-417-11	CARBON	1K	5%	1/4W
D805	8-719-991-33	DIODE 1SS133T-77				R918	1-247-807-31	CARBON	100	5%	1/4W
D806	8-719-991-33	DIODE 1SS133T-77				R919	1-247-807-31	CARBON	100	5%	1/4W
D807	8-719-210-21	DIODE ERA82-004TP5				R920	1-249-416-11	CARBON	820	5%	1/4W
D901	8-719-110-88	DIODE MTZJ-T-77-39									
D902	8-719-110-88	DIODE MTZJ-T-77-39				R921	1-249-429-11	CARBON	10K	5%	1/4W
D903	8-719-991-33	DIODE 1SS133T-77				R922	1-249-397-11	CARBON	22	5%	1/4W
COIL						R923	1-249-401-11	CARBON	47	5%	1/4W
L801	1-406-989-21	INDUCTOR	10mH			ACCESSORIES AND PACKAGING					
L802	1-459-111-00	INDUCTOR	10mH			* 4-392-859-01	BAG, PROTECTION				
L901	1-412-528-11	INDUCTOR	18 μ H			* 4-074-568-01	CARTON, INDIVIDUAL (KV-27FS12/27FS16 ONLY)				
TRANSISTOR						* 4-075-478-01	CARTON, INDIVIDUAL (KV-29FS12 ONLY)				
Q807	8-729-931-45	TRANSISTOR IRF614				* 4-074-565-01	CUSHION ASSY, REAR (UPPER)				
Q808	8-729-140-97	TRANSISTOR 2SB734-T-34				* 4-074-566-01	CUSHION ASSY, FRONT (UPPER)				
Q901	8-729-017-06	TRANSISTOR 2SC4793				* 4-074-567-01	CUSHION ASSY, LOWER				
Q902	8-729-017-05	TRANSISTOR 2SA1837				4-075-499-21	MANUAL, INSTRUCTION (KV-27FS12/27FS16 ONLY)				
Q903	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA				4-075-499-41	MANUAL, INSTRUCTION (KV-29FS12/29FS12C ONLY)				
Q904	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA				REMOTE COMMANDER					
Q905	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA				1-418-387-11	REMOTE COMMANDER (RM-Y168) (ALL EXCEPT KV-27FS16)				
Q906	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA				4-978-977-01	BATTERY COVER FOR RM-Y168				
RESISTOR						1-418-384-11	REMOTE COMMANDER (RM-Y169) (KV-27FS16 ONLY)				
R818	1-216-025-91	RES-CHIP	100	5%	1/10W	4-978-977-01	BATTERY COVER FOR RM-Y169				
R826	1-249-421-11	CARBON	2.2K	5%	1/4W						
R876	1-216-049-91	RES-CHIP	1K	5%	1/10W						
R901	1-249-401-11	CARBON	47	5%	1/4W						
R902	1-249-386-11	CARBON	2.7	5%	1/4W						
R903	1-249-414-11	CARBON	560	5%	1/4W						
R904	1-249-432-11	CARBON	18K	5%	1/4W						
R905	1-249-417-11	CARBON	1K	5%	1/4W						

NOTES:

[illegible]

NOTES:

[illegible]

HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

SERVICE MANUAL

BA-5 CHASSIS

<u>MODEL NAME</u>	<u>REMOTE COMMANDER</u>	<u>DESTINATION</u>	<u>CHASSIS NO.</u>
KV-27FS12	RM-Y168	US	SCC-S40D-A
KV-27FS12	RM-Y168	CND	SCC-S41D-A
KV-27FS16	RM-Y169	US	SCC-S40E-A
KV-29FS12	RM-Y168	E	SCC-S38K-A
KV-29FS12C	RM-Y168	E	SCC-S38L-A

ORIGINAL MANUAL ISSUE DATE: 5/2001

ALL REVISIONS AND UPDATES TO THE ORIGINAL MANUAL ARE APPENDED TO THE END OF THE PDF FILE.

<u>REVISION DATE</u>	<u>REVISION TYPE</u>	<u>SUBJECT</u>
5/2001	No revisions or updates are applicable at this time.	
6/2001	CORRECTION-1	New Block Diagram
8/2001	CORRECTION-2	Tuner P/N Change
10/2002	CORRECTION-3	New 2 Pin THP601

TRINITRON[®] COLOR TELEVISION
SONY[®]

<i>MODEL</i>	<i>COMMANDER</i>	<i>DEST</i>	<i>CHASSIS NO.</i>
KV-27FS12	RM-Y168	US	SCC-S40D-A
KV-27FS12	RM-Y168	CND	SCC-S41D-A
KV-27FS16	RM-Y169	US	SCC-S40E-A
KV-29FS12	RM-Y168	E	SCC-S38K-A
KV-29FS12C	RM-Y168	E	SCC-S38L-A

CORRECTION-1

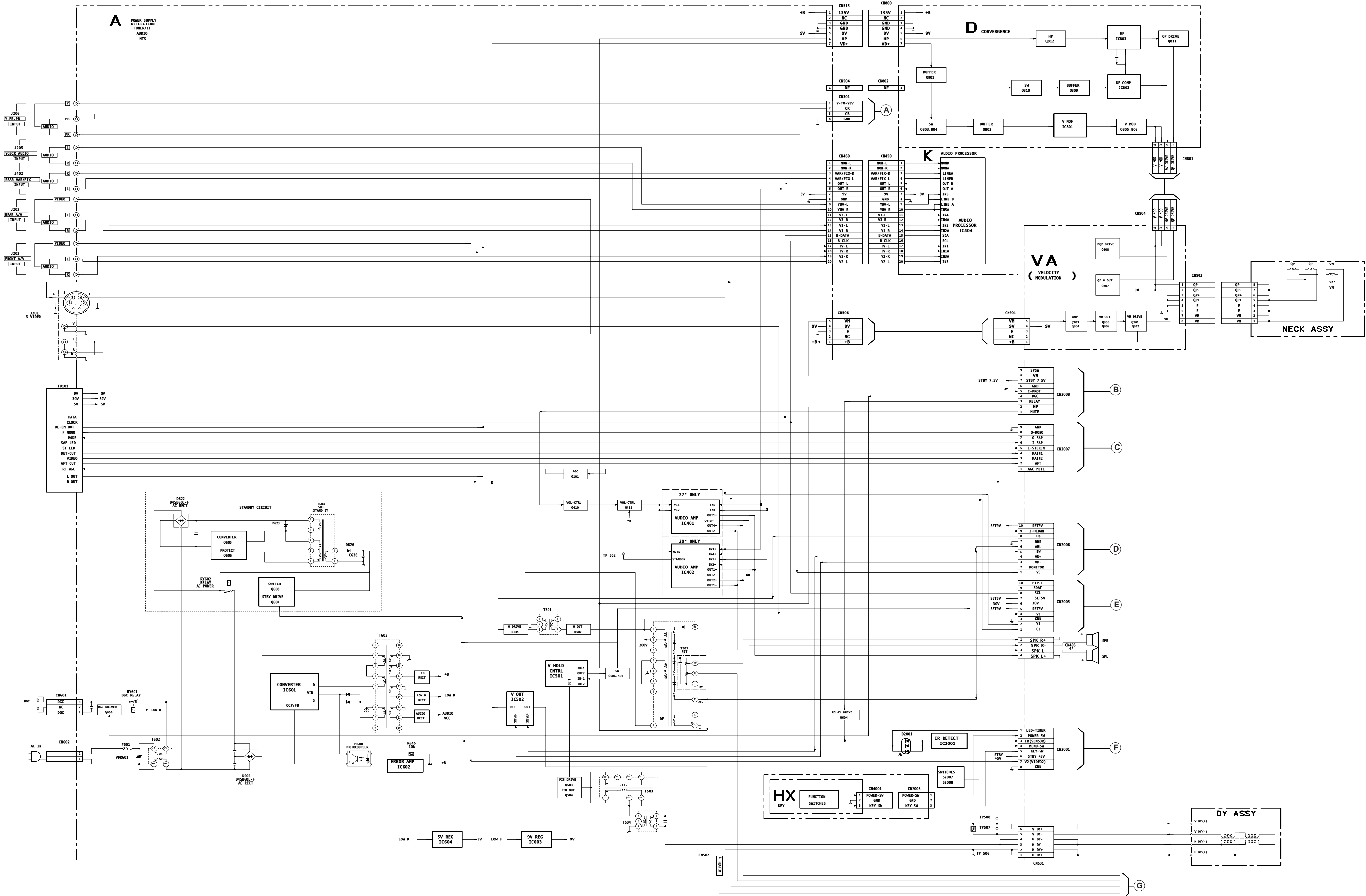
Subject: New Block Diagrams

Correct the service manual as shown below.
File this correction with the service manual.

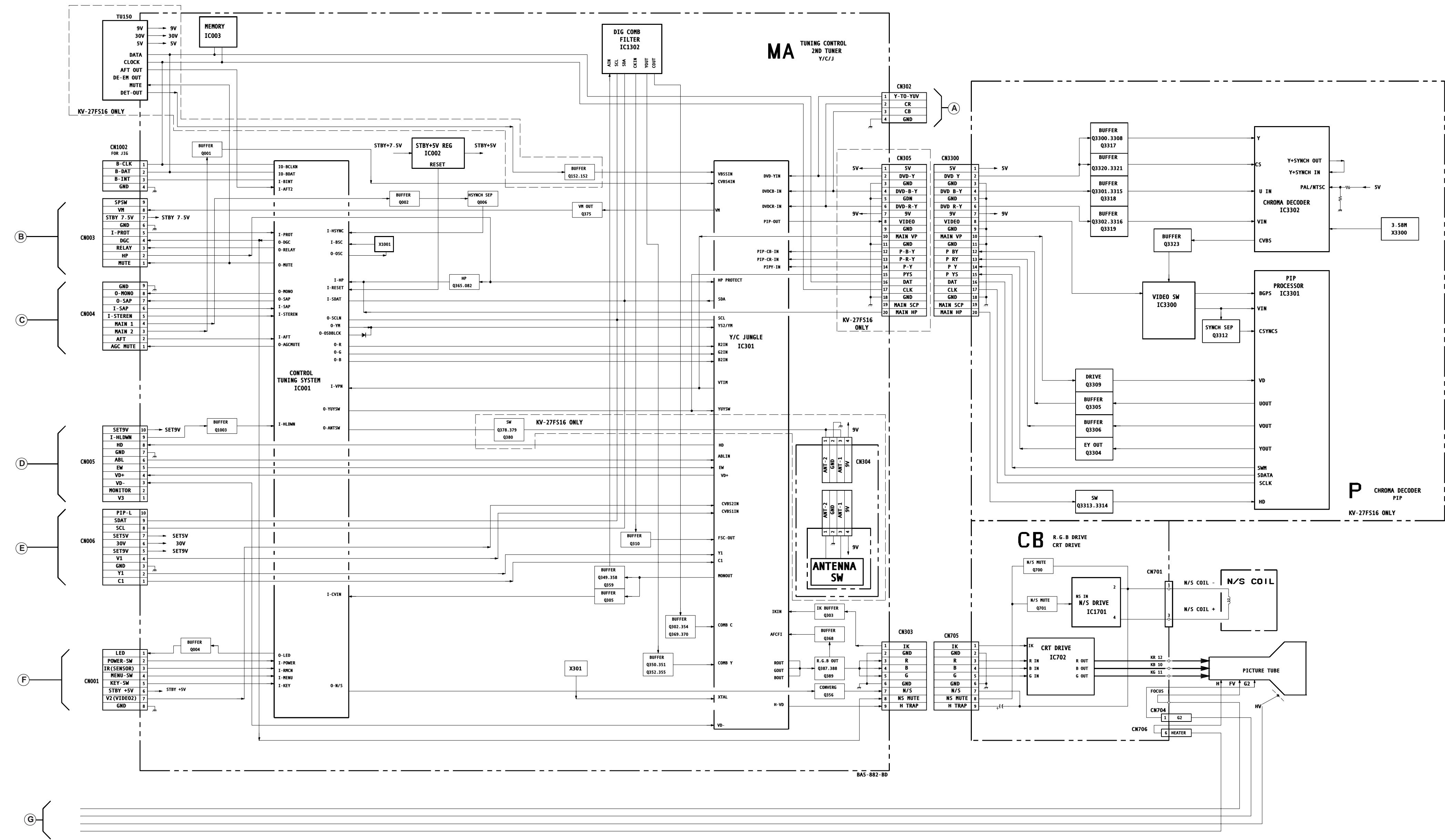
Section 6: Block Diagrams (Page 31-34)
Size of Block Diagrams increased and replaced.

SECTION 6
DIAGRAMS

6.1 BLOCK DIAGRAM (1/2)



6.1 BLOCK DIAGRAM (2/2)



SERVICE MANUAL

BA-5 CHASSIS

<u>MODEL NAME</u>	<u>REMOTE COMMANDER</u>	<u>DESTINATION</u>	<u>CHASSIS NO.</u>
KV-27FS12	RM-Y168	US	SCC-S40D-A
KV-27FS12	RM-Y168	CND	SCC-S41D-A
KV-27FS16	RM-Y169	US	SCC-S40E-A
KV-29FS12	RM-Y168	E	SCC-S38K-A
KV-29FS12C	RM-Y168	E	SCC-S38L-A

CORRECTION - 2





Subject: Tuner P/N Change

Correct the service manual as shown below.
File this correction with the service manual.

Section 7: Exploded Views (Page 59)

7-2. CHASSIS (KV-27FS12/27FS16 ONLY)

 :Modified Item

Incorrect				Correct			
REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
38 	8-598-431-30	TUNER, FSS BTF-WA411		38 	8-598-542-20	TUNER, FSS BTF-WA412	
Section 8: Electrical Parts List (Page 66)							
TU101 	8-598-431-30	TUNER, FSS BTF-WA411		TU101 	8-598-542-20	TUNER, FSS BTF-WA412	

TRINITRON® COLOR TV
SONY®

Sony Corporation
Sony Technology Center
Technical Services
Service Promotion Department

English
2001HJ74325-1
Printed in USA
© 2001.8

SERVICE MANUAL

BA-5 CHASSIS

<u>MODEL NAME</u>	<u>REMOTE COMMANDER</u>	<u>DESTINATION</u>	<u>CHASSIS NO.</u>
KV-27FS12	RM-Y168	US	SCC-S40D-A
KV-27FS12	RM-Y168	CND	SCC-S41D-A
KV-27FS16	RM-Y169	US	SCC-S40E-A
KV-29FS12	RM-Y168	E	SCC-S38K-A
KV-29FS12C	RM-Y168	E	SCC-S38L-A

CORRECTION - 3

SUBJECT: NEW 2 PIN THP601

Correct the service manual as shown.
File this Correction with the service manual.

SECTION 6: DIAGRAMS

6-3.A Board Schematic Diagram (Page 39)

SECTION 8: ELECTRICAL PARTS LIST (Page 66)

TRINITRON® COLOR TELEVISION

SONY®

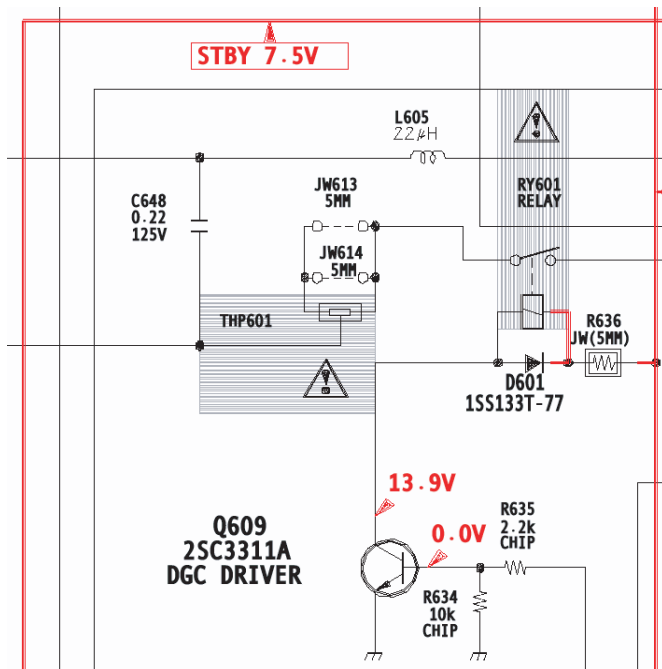
 : Corrected Item

SECTION 6: DIAGRAMS

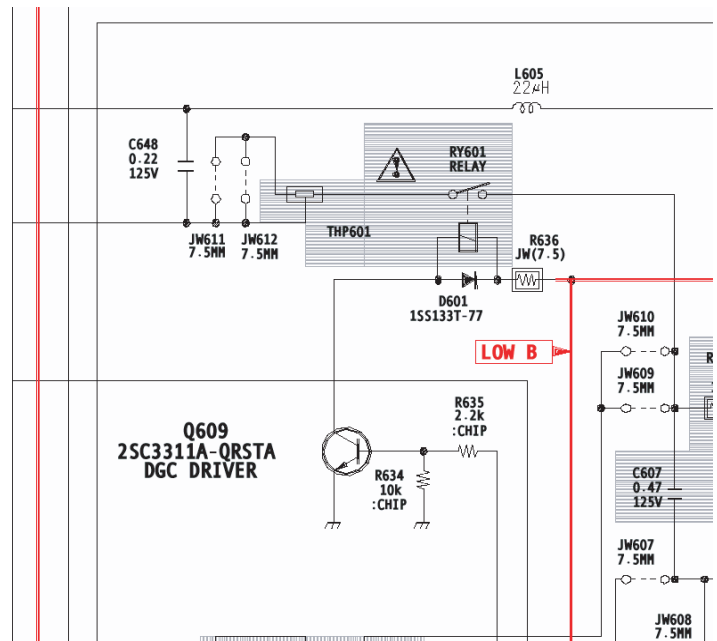
6-3.A Board Schematic Diagram (Page 39)

If a set requires a 3 pin (THP601) thermistor it may still be ordered using the existing part number. If a set requires a 2 pin (THP601) thermistor the new part number must be used.

For 3 Pin Configuration



For 2 Pin Configuration



SECTION 8: ELECTRICAL PARTS LIST (Page 66)

OLD

NEW

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
⚠ THP601	1-803-540-11	THERMISTOR	⚠ THP601	1-803-540-11	THERMISTOR (3 PIN)
			⚠ THP601	1-804-313-11	THERMISTOR (2 PIN)

Sony Corporation
Sony Technology Center
Technical Services
Services Promotion Dept.

English
2002JJ74WEB-1
Printed in USA
2002.10